KANUKU MOUNTAINS PROTECTED AREA PROCESS

COMMUNITY RESOURCE EVALUATION

KUMU
VILLAGE REPORT

October 23 —November 2, 2002

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Prepared by Conservation International Guyana
266 Forshaw Street
Georgetown
592 - 225-2978
592 - 225-2976
www.conservation.org

Acknowledgement

"Thank you"

This report is the result of work that was done in Kumu Village by the participants who represented their community and the members of the Conservation International team during the CRE workshop.

All of the work in this report is the result of the dedication and hard work of these persons who gave their time and shared their knowledge.

We would therefore like to thank each of the participants for taking time out from their lives to be part of the workshop.

The workshop would not have been possible without the help and support of Senior Councillor Mark Joseph, the other members of the village council and the Community Coordinator, Paul Francis, all of whom worked together to make the CRE a success! The community built three buildings especially for the purpose of the workshop.

The teacher in charge, Mrs. Linda Fredericks assisted the workshop by providing blackboards, tables and benches.

We would also like to thank Alice, Gladys and Uncle Chico for working tirelessly to provide the workshop with meals.

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LIST OF ABBREVIATIONS

CI -	Conservation International
CIG -	Conservation International Guyana
CRE -	Community Resource Evaluation
EPA -	Environmental Protection Agency
GCF -	Global Conservation Fund
GoG -	Government of Guyana
GPS -	Global Positioning System
ISV -	Initial Site Visits
KMPA -	Kanuku Mountains Protected Area
NAG -	National Advisory Group
NGOs -	Non-Governmental Organizations
NPAS -	National Protected Areas System
PA -	Protected Areas
PRA -	Participatory Rural Appraisal
RAG -	Regional Advisory Group
USAID -	United States Agency for International Development

INTRODUCTION

The Kanuku Mountains are considered to be one of the most biologically diverse areas in Guyana. In addition to the numerous eco-systems and unique flora and fauna found there, the Kanukus also support the livelihood, culture, and history of eighteen villages peopled by two of Guyana's Indigenous tribes, the Macushi and the Wapishana. As a result, the Government of Guyana has identified the Kanuku Mountain Region as an important area for conservation.

This report is the result of a Community Resource Evaluation (CRE) exercise that was conducted from May to December 2002 in eighteen communities that directly use the resources of the Kanuku Mountains. The purpose of the CRE was to determine the resource use patterns of these villages. For a period of eight months a group of ten CI researchers collaborated with members of each community to determine resource use in the area through workshops, discussions, fieldwork, and surveys.

This Village Report documents the quality and intensity of the resource use of the community in its interaction with the Kanuku Mountains, and also explores the community's perceived threats to that use. The Community Resource Evaluation (CRE) focused on the resource use categories of farming, hunting, fishing, and gathering.

The CRE report provides the resource use information set required for developing a proposal for a Protected Area in the Kanuku Mountains (KMPA). It is a tool to enable the community to record and communicate its resource use information to key government decision makers and other stakeholders in the process of proposing a protected area.

The information presented in this report was collected during a ten-day workshop in which a Conservation International research team collaborated with community participants to create tools to gather information on the resource use of the village. The CI team included members from the subject communities, who served as advisors, interpreters, and facilitators in the planning and implementation of the workshops.

The results of the CRE workshop are presented in three sections. The first records the research tools created by the participants: the resource list, the seasonal calendar, and resource use sketch maps. The second section presents the results of the data shared by the participants and collected during field observation in the mountains and in the village. In the final section, the results of the tool creation and the field observation are assessed to provide a profile of the way the community uses the resources of the Kanuku Mountains.

The CIG field team members included:

Andrew Demetro	Indigenous Knowledge Advisor
Richard Wilson	Indigenous Knowledge Advisor
Nial Joseph	Global Information Systems Technician
Vitus Antone	Forest Resource Advisor
Margaret Gomes	Wapishana Interpreter
Natalie Victoriano	Macushi Interpreter
Lloyd Ramdin	Agricultural Advisor
Sebastian Tancredo	Field Team Leader
Esther McIntosh	Facilitator
Susan Stone	Project Manager/Facilitator

The entire series of CRE workshops was implemented from CIG's Lethem office with the support and assistance of:

George Franklin	Regional Coordinator
Patricia Fredericks	Education and Awareness Officer
Julie Kanhai	Database Coordinator
Wendy Leandro	Education and Awareness Assistant
Margaret Kahn	Accounting
Vibert James/Stewart Charles	Transportation
Annie Charles	Meals

This study was initiated by the Government of Guyana (GoG) under the auspices of the Environmental Protection Agency's National Protected Areas Secretariat.

WORDS AND PLACE NAMES

In the writing of this report we have made every attempt to use the names of places and resources most commonly known in the region. Both Macushi and Wapishana are oral languages in their original form. Projects are now underway to create a written form of both languages. During such a transitional period, it can be difficult to find agreed upon for word usage and spellings.

The resource lists and seasonal calendars are reproduced largely as the participants recorded them. When the same resource item was spelled in different ways, the most commonly known spelling was used. This was assisted by the feedback from the participants during the Results Feedback Workshops held in each community, and by the Macushi and Wapishana members of the CRE team.

The spelling of place names was standardized in the text of the Village Reports, again using the most commonly recognized spelling, as best it could be determined. In the list of the geo-referenced resource use sites, the place names are shown as the team members recorded them.

In addition to the community and CRE team members, we have relied on the "Scholars Dictionary and Grammar of the Wapishana Language-Tominpainao Ati'o Wapichan Paradan Parada-karu na'iki Paradauzo-kara kaduzu", as compiled by the Wapishana Language project in cooperation with Wapichan Wadauniinao Ati'o. The Wapishana language Project, Rupununi, Guyana (August 2000) and "Makusipe Komanto Iseru: Sustaining Makushi Way of Life, edited by Janet Forte, commissioned by the Iwokrama Rainforest Program, copyright by North Rupununi District Development Board, 1996. These works provided valuable guidance in common names, word usage and spellings.

CONSERVATION INTERNATIONAL

Conservation International (CI) is a global leader in conservation – working to preserve threatened ecosystems in more than thirty countries on four continents.

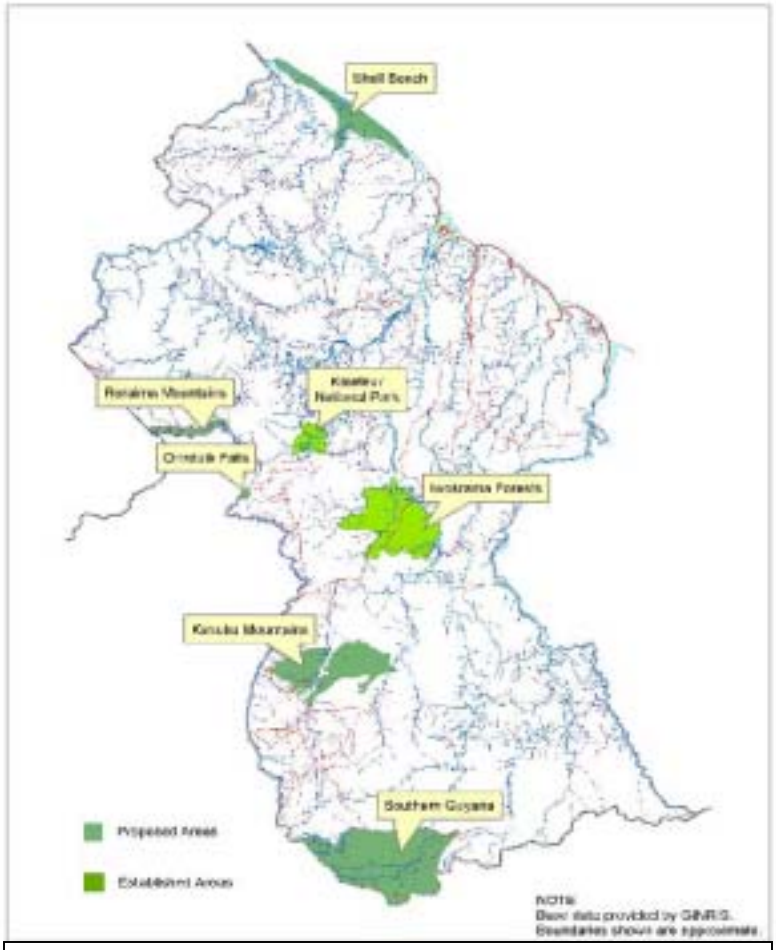
CI has been active in Guyana since 1990 and has led research expeditions, media events and educational activities. The strategic plan of CI Guyana (CIG) is to promote the conservation of biodiversity and the protection of critical ecosystems, through a process comprising scientific research based on priority setting, collaboration with partner NGOs and state agencies, and consultation with communities and other stakeholders.

In 2000, the Government of Guyana, through the Environmental Protection Agency, invited CI Guyana to perform the role of lead agency in the process of establishing a protected area in the Kanuku Mountains, one of the five priority sites identified for conservation. CI Guyana is committed to a process that involves and seeks participation of all stakeholders at the national, regional, and community levels.

PROJECT LOCATION

The Kanuku Mountains are located in the Rupununi Savannahs of Region Nine of southwestern Guyana. The mountains are approximately 100 km east-to-west and 50km north-to-south and are divided by the Rupununi River into eastern and western ranges with peaks up to 1,000 meters.

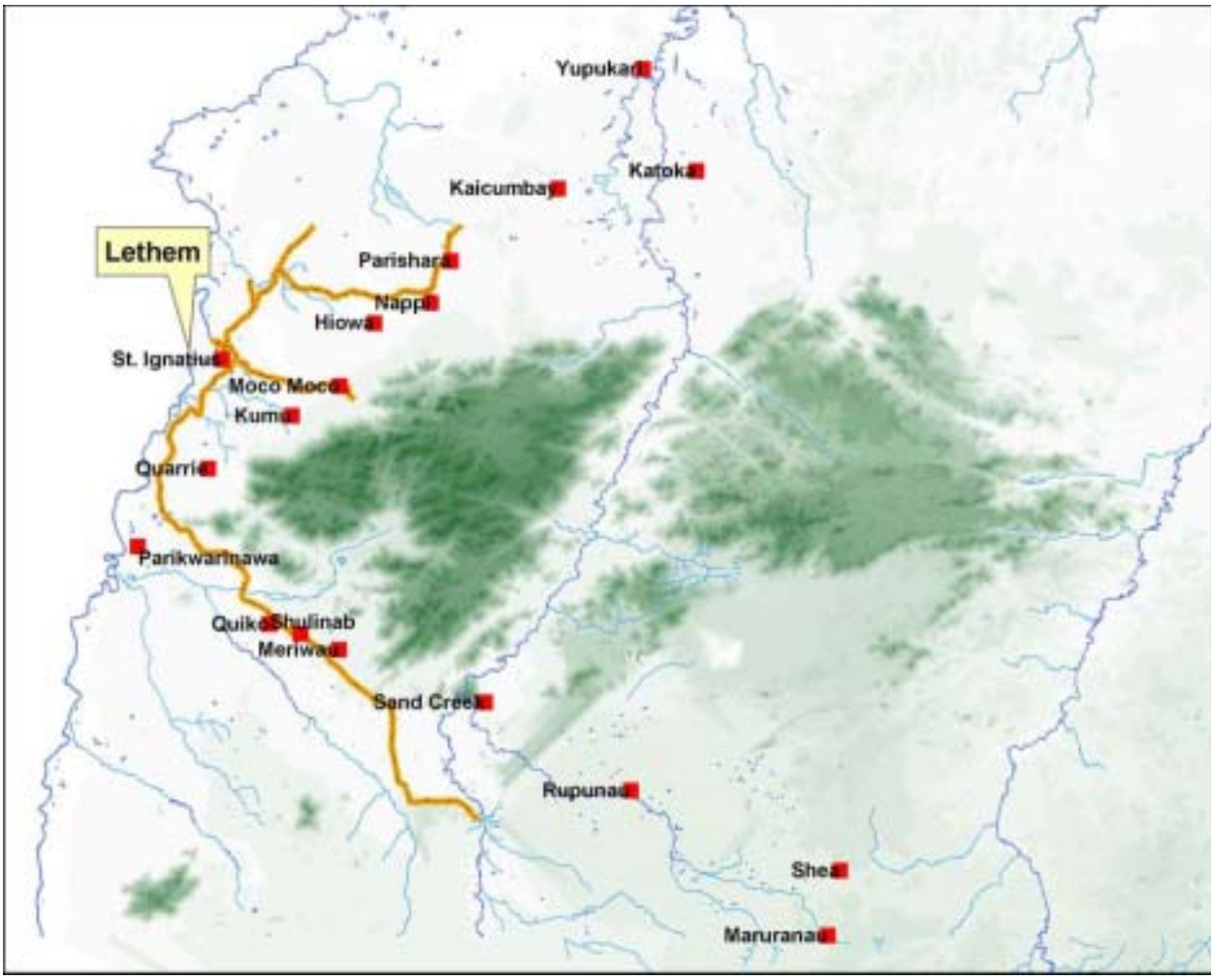
The Kanuku Mountains Proposed Protected Area (KMPA) is one of five areas in Guyana that have been identified by the Environmental Protection Agency (EPA) for conservation efforts. These areas are selected because of their beauty, landscape or richness in biodiversity.



Map Showing Five Priority Sites in Guyana

The Kanuku Mountain Range was identified because it is one of the most biologically diverse areas in Guyana. Approximately 350 species of birds, or about half of all the bird species so far identified in Guyana can be found in the Kanuku Mountains. Eighteen of these species are unique to the lowland forests of the Guianas. The Kanuku Mountains are also home to two of Guyana's nine Amerindian tribes: the Wapishana and the Macushi.

The eighteen villages that were studied use the resources of both the western (13) and eastern (5) ranges of the Kanukus. The riverain communities of Sand Creek, Katoka, and Yupukari access resources on both sides of the Rupununi River, their activities taking them into both ranges of the Kanukus.



Map showing 18 Communities that directly use the Kanuku Mountains

PROJECT OVERVIEW

Conservation International has a long-standing presence in Region 9, which began in 1991 with the filming of the Harpy Eagle for National Geographic. In 2000 Conservation International Guyana was asked by the Government of Guyana (GoG), through the EPA to be the Lead Agency in guiding the process leading up to the declaration of a Protected Area in the vicinity of the Kanuku Mountains.

In pursuing this mandate CI's work has been divided into two main areas: gathering information and engaging stakeholders.

The participation of stakeholders has been identified as being critical to the process. Therefore between April 2000 and April 2001, consultations were held with Regional and National stakeholders. Advisory committees were formed at both levels, the Regional Advisory Group (RAG) and National Advisory Group (NAG).

The RAG includes representation from local government institutions, Village Captains (Touchaus) and members of their Councils, the Touchaus Council, Women and Youth Groups, Indigenous Advocacy Groups and other interest groups functioning in Region 9.

Significant contributions of the RAG include:

- The identification of the eighteen (18) communities to be directly involved in the consultation process;
- The identification of two (2) Indigenous Knowledge Advisers to the consultation teams to ensure that culturally appropriate processes were followed, through which community members were able to express their views;
- The identification of two (2) interpreters - one (1) Macushi and one (1) Wapishana, to accompany the consultation teams;
- The endorsement of the principle of one (1) person from each of the communities functioning as a Community Coordinator. The appointment of the Community Coordinator was made by the communities and his/her role was to:
    a. Provide a continuous presence in the villages after the consultation teams had left;
    b. Explain during the period that the consultation teams were away from the villages, those concepts that might not have been clear to them during the meetings or for which additional information was needed; and
    c. Function as a liaison between their community and CIG.
- The endorsement of the programme of consultations, and also the representation of the regional stakeholders on the National Advisory Group.

The RAG also made recommendations for:

a. Improvement in the proposed programme of consultations, education and awareness engagements and training; and
b. The scheduling of consultations.

The National Advisory Group was comprised of representatives of the natural resources sectors, other relevant agencies of GOG, the Human Rights Association, all Indigenous Advocacy Groups, other environmental NGOs, opinion leaders and Parliamentary Opposition Political Parties, among others.

Significant contributions of the NAG include the:

- Recommendations to improve the proposed programme of consultations, education and awareness engagements and training;
- Endorsement of the final programme for consultations;
- Identification of the natural resources sectors which were to be more directly involved in the consultations;
- Recommendation of the datasets to be made available for the design of the protected area; and
- Provision of a forum for the concerns of the representatives from the RAG to articulate the views and concerns of the stakeholder groups that they represented**.**

Initial Site Visits (ISVs) were conducted in all of the eighteen communities to provide information on Conservation International, the protected area process, and the proposed Community Resource Evaluation. Recognizing the need for an informed stakeholder group, workshops were held for community leadership (Touchau, Village Council, Teachers and Community Coordinators). The CRE activity represents a continuation in efforts to engage a wide stakeholder group.

In the area of information gathering several complementary studies were carried out. These included, digital over flights, scientific research for biological data (CI Rapid Assessment Program in 1993, 2001) and a CI commissioned Socio-Economic Survey (Gordon Forte, 2001). The Government of Guyana's 1992 *Country Study of Biological Diversity* informed these later activities. The information obtained from the CRE represents the final set of data that is required to inform the management objectives leading to the proposal of the appropriate type of protected area in the vicinity of the Kanuku Mountains.

CRE OVERVIEW

The overall purpose of the Community Resource Evaluation (CRE) is to work together with the community to understand the extent and intensity of resource use by the eighteen villages that directly use the resources of the Kanuku Mountains. By involving the community in the research the CRE also provides an avenue for the community to communicate its resource use to key decision makers and stakeholders in the process of establishing a protected area

The CRE is an informal data collection exercise to gather information on resource use patterns in the Kanuku Mountains. The study seeks to record what resources are used, the extent of use (where the communities hunt, fish, farm and gather) and local perceptions of resource availability and threats.

Some of the methods that were used in the CRE have been adapted from the Participatory Rural Appraisal (PRA) research methodology used to gather information in rural areas. It stresses a participatory approach to development and learning from the local people.

One of the main strengths of the CRE is that the community, by selecting twenty-five to thirty villagers to participate in the research, has been engaged directly. The participants took part in the exercise, received training, shared knowledge, and were able to successfully contribute to the data collection.

METHODOLOGY

The tools used in the CRE were designed to be simple and to allow for maximum participation. To ensure effective communication and understanding, sessions and discussions were conducted in the local language whenever necessary. The Community Coordinator served as part of the CI team, assisting in interpretation, logistics, and leading bush or village teams. The approach is a learning process; to this end all the participants and the CI team members are simultaneously learners and teachers.

Through discussion, spatial data exercises and field observation, a common frame of reference is created to enable the community to effectively communicate its patterns of resource use to the government and non-government agencies involved with them in the protected areas process.

At the beginning of each CRE a public meeting is held to inform the community about the exercise and to provide information. Twenty-five persons are selected by the community to represent them in the CRE. The selections are made independently, with the criteria that all community groups are represented, (including women, youths, and a range of age groups) and that persons with knowledge of the forests and trails are included.

DESCRIPTION OF TOOLS

The following tools form the basis of the CRE:

1. **Focus Groups**
2. **Resource List**
3. **Seasonal Calendar**
4. **Resource Sketch Maps**
5. **Field Observation**
6. **Surveys**
7. **Mini lectures**

1. Focus Groups

The twenty-five participants work with the CRE team throughout the evaluation exercise both in large and small group discussions. During the first day's activities, this group self-selects into three focus groups of eight-nine persons to work in the resource categories of a.) Farming; b.) Hunting & fishing; c.) Gathering. Their decision is based on their knowledge of the focus group topic. The large group serves as a unit to discuss the results of the focus group sessions, and to provide feedback and broader consensus on the information recorded.

2. Resource List – "The What"

The resource list is created first, and forms the basis for the other tools. Participants list all of the resources in the category that are actively used by their community. The names of resources are listed in English and, where possible, in the local language.

3. Seasonal Calendar – "The When"

The seasonal calendar is a participatory tool used to explore seasonal changes and the activities of the village during the year in each resource use category. The creation of the seasonal calendar begins with the listing of the twelve months of the calendar year. This forms the basis for a group discussion among the entire participant group. The participants list the main seasons, wet and dry, as they occur throughout the year. The intermittent showers and dry spells are also included. Because the seasons are closely linked to the movement of the stars and other natural events, these milestones are also included. Once the seasonal comparison is completed, the large group then breaks into the three focus groups and individually lists the activities in the resource category that are done throughout the year. The groups then reconvene in the large group and present their work for validation and correction.

4. Sketch Mapping

The core of the methodology is the use of informal sketch mapping. This tool is used to create a visual, spatial representation of village resource use areas. This traditional Participatory Rural Appraisal technique is modified to exclude the use of boundaries in the mapping exercise. The goal is to have the community create a spatial record of resource use, without regard to boundaries, whether actual or perceived, and without regard to land ownership. The focus is the area of actual use wherever it occurs. This approach allows the community to focus their feedback on the primary goal of the CRE exercise - communicating and understanding where and how resources are used – with emphasis on the extent and intensity of use into the Kanuku Mountains.

In order to create a spatial frame of reference for the recording and discussion of use, participants are asked to sketch out a skeleton or base map of the significant features of the community – village center, roads, trails, waterways, that are essential to accessing and using resources. Participants draw the skeleton map on a large chalkboard from each resource group. The entire participant group must come to consensus that the base map created adequately represents the village. The skeleton map is then copied by all the groups onto separate cardboard sheets, which are used, by each focus group to record the specific resources used in the areas identified during their discussions. The maps are then presented to the larger group for input as to content and accuracy. These maps are also taken into the field so that the information can be verified through observation, and the furthest points of use as indicated can be visited, observed and geo-referenced.

When all of the individual Resource-Use Sketch Maps have been created, the resource information is combined and recorded on the chalkboard skeleton map resulting in a complete visual and spatial profile of the type and location of resource use in the community. The entire group must again come to agreement that the combined representation accurately depicts the resource use of the village. The information is then transferred from the chalkboard onto plywood board using paints in a variety of colors to create a permanent community resource use record.

All the maps are digitally photographed to preserve the data for analysis. The originals of the Resource-Use Sketch Maps and the Master Resource-Use Map remain in the community as

their record of the Community Resource Evaluation exercise. A copy of the master resource map is drawn for the records of the CRE team.

5. Field Observation

After the basic tools are completed, the participants are divided into two groups: the "bush team" of approximately fifteen persons, focusing on field observation, and the "village team" of ten persons, focusing on the village survey interviews and student interactions.

The "bush team" meets as a group to study the sketch maps and to decide on the routes to be taken to observe important resource use areas, and to reach the furthest points of use. The group then divides into three groups, each assigned to a different route. The community participants lead the team, with a CI team member facilitating the work. The purpose of the fieldwork is to work together with the community participants to:

a. Verify information on location and extent of resource use as discussed and recorded in the focus group and sketch mapping activities, using the Resource Use Sketch Map from each individual category, as the basic reference tool
b. Record information about each site visited on a field data form.
c. Locate and geo-reference the sites visited, including the points of furthest use in the furthest areas of use

6. Village Surveys

During the four-day period the "bush team" is in the field, the remaining participants on the "village team" conduct informal interviews with the wider community. This is done using a survey with simple questions about resource use in the same categories addressed by the focus groups:

- A mini-lecture is given on information gathering and surveying techniques
- The participants then undergo a mock interview exercise for practice
- The community participants draw an informal sketch map of the village on which all households are placed. The group selects potential interviewees based on representation of village areas and the different social groups within the village.
- The participants go out to the homes of those who have been identified to seek permission for the interview
- The interviews are conducted
- A sample of the results of the survey are compiled and studied

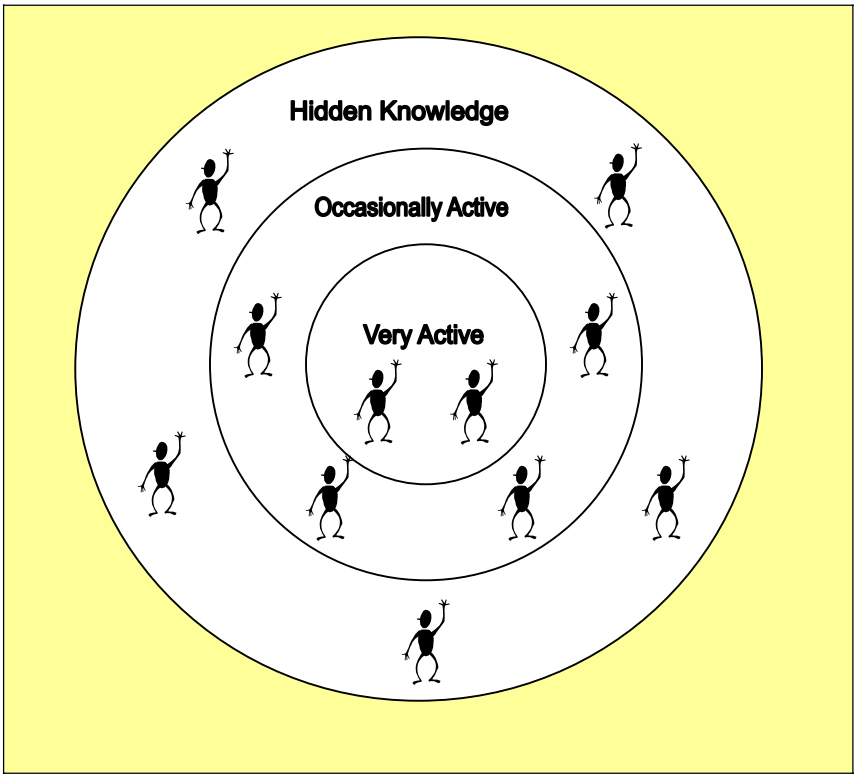
7. Mini Lectures

A number of short lectures are used throughout the exercise to build upon the education and awareness aspect of the consultation process. Topics include those which were presented in the Initial Site Visits.

1. Protected Areas
    - The categories of Protected Areas
    - The steps to establishing a Protected Area
2. Conservation International and its role as a lead agency

3. Levels of Community Participation (see diagram below)
4. Where am I on the face of the Earth
    - Informal versus formal mapping
    - Geo-referencing/GPS training – a tool to record resource site location.
5. Survey methods and techniques

LEVELS OF COMMUNITY PARTICIPATION EXERCISE



Very Active participation refers to persons that are always involved in community activities. This group of people is very informed and active in the village. An example of this type of person would be the Touchau, Councillors, Parents Teachers Friends Assn. (PTFA), teachers and community health worker (CHW).

Occasionally Active participation refers to persons who are sometimes involved in community activities, because they have an interest in one or more area, for example attendance at the PTFA or church meeting. These persons would only be part of these meetings when the topic affects them.

Hidden Knowledge refers to those persons who seldom attend community meetings. Because these persons frequently live far from the village center, they may not attend church services (where most announcements about community events are made) and are not really a part of the activities in the village. These persons often have a broad knowledge about resources and their environment, but as they do not have an opportunity to share what they know, it remains "hidden" from the community.

For the purpose of the CRE everyone is important and has an important role to play in the exercise.

TYPICAL CRE ACTIVITY TIMELINE

CRE ACTIVITY	Day 1	Day 2	Day 3	Day OFF	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Village Council Meeting										
Public Meeting										
Resource List										
Seasonal Calendar										
Resource Maps										
Field work Preparation										
Field Work										
Student Interactions										
Surveys										
Closing Public Meeting										

For a brief activity schedule see Appendix 1.

Community Resource Evaluation Village Report

KUMU

KUMU VILLAGE REPORT

The Community Resource Evaluation (CRE) was conducted at Kumu from October 23rd to November 2nd, 2002. The Kumu CRE formed part of a larger CRE exercise that was conducted simultaneously in Saint Ignatius and Quarrie. Saint Ignatius is the administrative village under which both Kumu and Quarrie fall.

The CRE engaged a wide range of participants including village councillors, women and church group leaders, youths and elders. The group included persons having a vast knowledge of various aspects of their resources from which the activity greatly benefited.

The CRE was able to successfully meet its objectives in collecting information from the community, geo-referencing the furthest points of resource use and reaching out to the members of the wider community.

The information contained in this Kumu Village Report is divided into three main sections. The first section provides information on the village including demographics and a list of the participant group. The introduction is followed by a section, which lists the results of the workshop tools i.e. resource lists, seasonal calendar and sketch maps. The second section also includes the results of the fieldwork done in the mountains and in the village. The third and final section provides a resource-use profile of the village, which is an analysis of the pattern of the resource use as observed and documented during the CRE.

VILLAGE DESCRIPTION

Kumu is located in the savannah at the edge of the forest approximately 1.5 miles from the Kanuku Mountains. The village lies on the western side of the mountains. The center of the community lies at 3.29919° N and 59.72278°W. The community is 7 miles away from St. Ignatius village.

Kumu is a mixed community, comprised of both Wapishana and Macushi. The community is separated into five sections: Berbice, Cuba, Caracas, Central One &Two and Marakana Tuba. The village is officially administered by St. Ignatius, which also uses a large section of Kumu from Ruga-waga (Lukewater) to Masa-Wî Wîtî Falls (Dragon Falls) for resource needs. The main economic activity of the community is farming and rearing cattle.

Kumu is well established with a church, primary school, community center, health post and teachers building.

DEMOGRAPHICS

Population Structure

Age Group	Male	Female	Total
< 1 yr	5	6	11
1 – 4 yrs	27	16	43
5 – 14 yrs	47	47	94
15 – 19 yrs	13	16	29
20 – 44 yrs	40	34	74
45 – 64 yrs	13	10	23
≥ 65 yrs	6	4	10
Total	151	133	284

In total there are 52 households in Kumu.
Source: Socio – Economic Survey (Forte: 2000)

Administration

The following persons were elected to the Village Council on March 16, 2002. The Touchau Wilson Laurentino is from and based in the main administrative village of St. Ignatius, under which Kumu is administered. The other councillors are from Kumu village including the Senior Councillor.

- **Mark Joseph (Senior Councillor, Kumu)**
- **John Anderson**
- **Ancil Peter**
- **Brian John* (later replaced by Michael Juan)**
- **Phillip Ignacio**
- **Waveney Torquarto* (later replaced by Lomas Francis)**

These councillors serve as part of the main administrative council of Kumu, Quarrie and St. Ignatius, led by Wilson Laurentino who was elected Touchau by all three villages.

Participant Group Information

The participant group represented a wide range of persons, with representation of all parts of the village.

In total three councillors took part in the CRE, including the Senior Councillor, Mark Joseph. There was also one ex-councillor. In addition there were several church helpers. The group also consisted of farmers, hunters, fishermen and gatherers who brought a wealth of knowledge to the workshop.

In total there were 25 participants, six (6) women and nineteen (19) men who participated.

The majority of the group had never participated in a workshop.

The names of the participant group are as follows:

Mark Joseph	Lomas Francis	Vernon Ignacio	Desmond Ignacio
Michael Juan	Osma Francis	Albert Peters	Valentine Bernard
Laurence Torquarto	Leonie Marare	Sina Juan	Petroneillia Peters
Dennis Valerio	Terry Parks	Brenda Francis	Gilbert Raymond
John Anderson	Toney Campion	Phillip Ignacio	
Vincent Paulo	Anthony Paulo	Christopher Francis	
Felicia Campion	Charlie Francis	Aaron Francis	

Paul Francis (Community Coordinator)

Participant Age Profile

AGE	15 - 28	29 - 40	41 – 55	Above 55
No. of persons	**5**	**7**	**13**	**0**

For a profile of the CI team see Appendix 2. The CI team consisted of:

Vitus Antone - Resource Advisor
Natalie Victoriano - Macushi Interpreter
Sebastian Tancredo - Field Team Leader
Esther McIntosh - CRE Facilitator

CI Team Members: From left Sabastian, Esther, Natalie and Vitus.

CRE WORKSHOP RESULTS

CREATION OF THE TOOLS

The creation of the tools for the workshop took approximately three days. The participants divided themselves into three focus groups to produce the tools in the different resource use areas; farming, hunting/fishing and gathering. After each tool was complete, the group reported on the work. This allowed contributions and agreement form the whole group for each resource area. Each group created a resource list and sketch map. The seasonal calendar was done with the help of the whole group.

Senior Councillor Mark Joseph presenting the Resource List

Participants created three tools to help communicate Kumu's resource use:

- Resource list – "what" resources the community uses
- A Seasonal Calendar – "when" the resources are used
- Sketch Maps – "where" the resources are found

Participants creating the Seasonal Calendar

In this section the results of each of the resource focus groups will be examined individually. The information is presented in the following order; farming, hunting, fishing, and gathering.

The women played a vital role in creating the Farming Resource Use Map

RESOURCE LIST
"The What"

FARMING

In total forty-six different types of crops were listed as being actively farmed by the community. This list includes: vegetables, fruits, seasonings and peanuts.

The village is located close to the Kanuku Mountains. The community farms extensively.

Crops			
1.	Cassava	24.	Bora
2.	Yam	25.	Ochro
3.	Potato	26.	Pear
4.	Banana	27.	Eschallot
5.	Sugar cane	28.	Orange
6.	Pine apple	29.	Mango
7.	Pumpkin	30.	Crawa
8.	Watermelon	31.	Cashew
9.	Eddoe	32.	Coconut
10.	Corn	33.	Lime
11.	Paddy/rice	34.	Passion fruit
13.	Pepper	35.	Tomato
13.	Cotton	36.	Tobacco
14.	Arrow	37.	Squash
15.	Papaw	38.	Cherry
16.	Peanut	39.	Sugar apple
17.	Pea	40.	Flower plant
18.	Poison	41.	Tangerine
19.	Benah	42.	Boulanger
20.	Sorrel	43.	Cabbage
21.	Broom (bird seed)	44.	Onion
22.	Pop corn	45.	Garlic
23.	Neem plant	46.	Lemon grass
48.	Cucumber		
49.	Ginger		
50.	Barley –sur gum		
51.	Melon		
52.	Calabash		

HUNTING & FISHING

In total thirty-one (31) types of game were listed by the group. The list includes armadillo, two different types of turtle and bush quail. The group listed thirty-six (36) types of fish including crab, eel and Arapaima.

Hunting				**Fishing**			
1.	Labba	19.	Bush quail	1.	Cuti	19.	Sword fish
2.	Tapir	20.	Anaqua	2.	Pacou kataback	20.	Dog fish
3.	Bush Deer	21.	Mongoose	3.	Yakatu	21.	Arawana
4.	Savannah Deer	22.	Land turtle	4.	Houri	22.	Arapaima
5.	Agouti	23.	Pitra turtle	5.	Yarrow	23.	Cassie
6.	Adouri	24.	Toucan	6.	Hassar	24.	Shrimps
7.	Capybara/capivare	25.	Nigger-coup	7.	Dari	25.	Crab
8.	Armadillo	26.	Anteater	8.	Logo logo	26.	Eel
9.	Spider monkey	27.	Manbera	9.	Patwa	27.	Flounder
10.	Baboon	28.	Jaguar	10.	Cashimbo	28.	Water turtle
11.	Quatchi	29.	Iguana	11.	Piab	29.	Alligator
12.	Powis	30.	Duckla	12.	Manica	30.	Mata mata
13.	Mascuvy duck	31.	Bush hog	13.	Sun fish	31.	Bagree
14.	Wisi wisi duck			14.	Perai	32.	Haimara
15.	Macaw			15.	Tiger fish	33.	Sting ray
16.	Maam			16.	Lukunani	34.	Biara
17.	Waracabra			17.	Kuyu kuyu (qui qui)	35.	Basha
18.	Marudi			18.	Banana fish	36.	High water fish

GATHERING

In total the gathering group listed fifty (50) materials that are gathered by the community. These include medicinal plants, housing materials and wild fruits.

Materials			
1.	Balata tree	23.	Casana rope
2.	Leopard wood	24.	Plum
3.	Brest wood	25.	Cocoa
4.	Cedar	26.	Walaba
5.	Nib	27.	Mora
6.	Equa tree	28.	Wild cashew
7.	Ete tree	29.	Kupa vine
8.	Cocorite	30.	Capadulla
9.	Muckru	31.	Wild mango bark
10.	Caramani	32.	Bamboo tree
11.	Incense	33.	Maipaima bark
12.	Hiari	34.	Locust tree
13.	Turo	35.	Caterpillar tree
14	Palm tree	36.	Couti tree
15.	Green heart	37.	Agouti tree
16.	Biscuit wood	38.	Purple heart
17.	Blood wood	39.	Spice bark
18	Red heart	40.	Silk cotton
19.	Bush rope	41.	Gum tree
20.	Pear tree	42.	Gum vine
21.	Rod tree	43.	Awara tree
22.	Turtle ladder	44.	Manicole tree
45.	Macaw head tree	48.	Lou
46.	Fruits	49.	Sand more
47.	Sweet cassava tree fruit	50.	Ete worms

SEASONAL CALENDAR
"The When"

The group identified two main seasons, the dry and the wet season. These seasons were then written down in the month (s) of the year in which they occur. As can be seen in the table, the group identified a number of shorter, intermittent spells of wet or dry weather also occurring within the year.

In addition to very detailed information on village activities throughout the year, the group also listed several names in the local references, some in the Macushi language. The seasons that were noted with local names are: Turtle Shower (January – February), Easter Rains (March – April), Cashew Showers (October) and Turtle Rains (December). These names are given to a season based on a natural milestone that occurs.

There were also milestones based on the constellations, which signal the beginning or end of a season. As can be seen in the calendar April – May is the time when the Seven Stars go down, which is followed by a group of stars being visible in May (Tapir Jaw Bone). June – July is *Ibeaben* (One Leg Lady). August through to December is *Town-a-kombi*.

Once this was established and agreed to by the participants, they proceeded to look at each resource category (farming, hunting & fishing, and gathering) and to list the activities that occur in the different seasons. The information that follows is a description of the results of the completed seasonal calendar.

FARMING

Land preparation for farming begins in November when the under bushing is done. In January to February the trees are allowed to dry after which they are burned and cleared (February to March). In April several crops are planted such as pumpkin, corn, rice, banana, sugarcane, watermelon, garlic and cassava. In May several cash crops are planted such as peanut, cassava and bananas.

HUNTING & FISHING

Hunting and fishing is done throughout the year. The location in which fishing is done and the methods that are used vary according to the season. As can be seen from the calendar, from January to April fishing is done mainly in lakes and ponds using cast nets, seine, and bows and arrows. A number of fish are caught including patwa, hassar, houri, sunfish, dari, cassie, lukunani, yakatu, and logo logo. By March the rivers are used more frequently, along with some creeks. In the river several large fish are caught; lukunani, banana fish, arapaima, swordfish and also water turtle. From June to the end of the year both rivers and creeks are used. Various methods are employed to catch fish including, hook and line, bow and arrow, and seines.

Hunting is done throughout the year for labba, bush and savannah deer, armadillo, agouti, land turtle, macaws, spider monkeys and alligator. To match the diversity of game, the community hunters use a variety of methods, including hunting dogs, guns, rope, and arrow traps.

Hunting is intensified at Easter when there is large communal hunt for the holidays.

GATHERING

The community gathers materials throughout the year. However there are some materials that are restricted to a certain time of the year. In January, hiari (a poison) is collected and from April through June a combination of wild fruits (cocorite, plum, balata fruits) and breast wood are gathered. The last four months of the year lumber, manicole, turo and lou are gathered. Several materials are gathered throughout the year these include; muckru, caramani, bush rope, bamboo, incense, medicines, and craft materials.

Revised Seasonal Calendar for Kumu

	January	February	March	April	May	June	July	August	September	October	November	December
SEASON		Turtle Shower	*Heavy Dry*	Easter Rains	Seven stars go down / Tapir Jaw Bone	Ipeaben/one leg lady /Scorpion Quyno Mripi morning star		Short Rains / Town-a-kombi		Cashew Showers	1 week Rain	Christmas Rains
	Dry Season				Rainy Season	*Floods*	Rainy Season	Dry Season				
FARMING	Allow to dry		Burn & Clear	Plant [1]	Plant [2]	Weeding		Reap & Plant: Bora, corn, cotton, pepper, tomato, black eye, pumpkin, watermellon		Reap: paddy, yam, eddoe, potato	Under bush, cut and reap cassava	
FISHING	Patwa, hassar, houri, sun fish, dari, cassie, fox fish, Lukunani, Perai, logo logo, Yakatu Method: cast net, seine, bow & arrow		Fishing and hunting		*Creeks*: yarrow, houri, hassar, dari, cuti, pacou, cassie, patwa, cashimbu, crab	Fishing and Hunting						
	Lakes & Ponds				*Rivers* [3] / Fish March	Method: tangle seine, fish line & hook, bow & arrow, diving mask, stop off, torch and poison Rivers & creeks				Method: seine, bow & arrow, facemasks to dive Rivers & creeks		
HUNTING			Easter Hunt-BIG		Hunting and Fishing							Game Hunted [4]
	Method: hunting dog, bow & arrow, gun, gun trap, wabanie, arrow trap, rope trap											
GATHERING	Craft materials, Leopard wood, Nibi, Muckru, Caramani, Bush rope, axe handle, coupa, bamboo, casna rope, medicinal, breast wood, eauga-yai, incense, capadula, Maipaima, spice bark, wild mango bark											
	Hiari			Cocorite, plum, balata fruits, breast wood				Lumbering, brick making, turo, lou, manicole				

[1] Pumpkin, corn, rice, popcorn, banana, sugar cane, bora, cotton, yam, watermellon, pepper, sweet potato, benah, eddoe, squash, cassava, ochro, Boulanger, Eschallot, garlic, passion fruit, arrow pine cane, crawa, poison

[2] *Peanut, cassava, banana*

[3] *Water turtle, tiger fish, baira, high water fish, sword fish, lukunani, arapaima, banana fish, kuyu kuyu (qui qui)*

[4] Labba, tapir, bush deer, savannah deer, agouti, armadillo, powis, land turtle, watrash, spider monkey, maam, macaw, waracabra, marudi, anaqua, alligator

SKETCH MAPS
"The Where"

The sketch maps were the last tools that were created. A group of participants most knowledgeable about the community's resource areas was selected to draw a base or skeleton map on a chalkboard, noting major features such as rivers, creeks, trails and the mountains. After the entire group viewed and agreed to the accuracy of this representation, the base map was copied onto separate cardboards. These were then used by each focus group to record the resource locations. In total three sketch maps were created in the three resource group categories of farming, hunting & fishing, and gathering. The keys of each resource map show the main resources that the participants selected to be included on the map.

Participants drawing the main Base Map that is used to create the resource maps in focus group

The sketch maps were used by each of the field research teams to choose their routes.
The maps show all the major resources in each resource category as prioritized by the participants.

The main rivers and creeks identified on the maps are Warmanie Creek, Matapee Creek, and Moco Moco Creek. Also identified on the map are the main neighborhoods of the village (Berbice, Cuba etc.), the school, playground, main road, and the cemetery.

The village is well spread out at the foot of the mountain in the high land savannah and bush islands.

FARMING RESOURCE USE SKETCH MAP

Farming grounds of Kumu are widely spread out. Different areas are farmed by different sections of the village. All farming activities are limited to the bush at the Mountain foot areas. Some farms are located downstream along the left bank of the Moco Moco Creek and on both banks of the Matapee Creek (a small tributary of Moco Moco).

Primarily the farming grounds within the mountain foot are old farming grounds evidenced by well-established farmhouses and full growth fruit trees. Also in the different sections the farms are made close to each other.

Residents of the different sections of Kumu all have different farming grounds. For instance people, from Cuba use the mountain foot and Crapo pond areas, from Berbice the Luke water and Moco Moco creek areas and from central Kumu the Kumu falls, Warmanie, and Jawarie

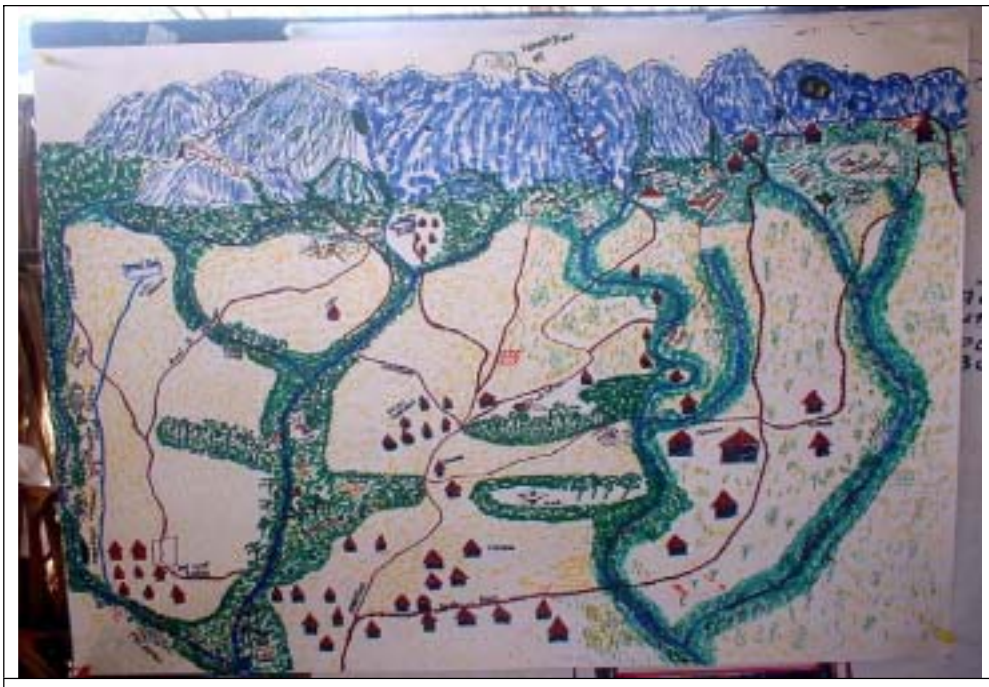
Most people from St. Ignatius farmed at Warmanie, Waroharo and Masawiiweitu and all the way back to Quarrie.

Kumu Farming Map

HUNTING AND FISHING RESOURCE USE SKETCH MAP

Kumu is located Northwesterly of the mountain range of the Kanuku's and hunting is concentrated in the bush at the foot of the mountain, in and around farm sites. Some amount of hunting is also done in the savannahs for game such as anteaters, armadillos, turtles and deer. The mountains are also used for hunting during/for special events like birthdays, Easter and Christmas.

As shown on the map, the main fishing areas are concentrated in the bush between the bush mouth and the mountain foot. Fishing on is centered in the Takatu River, Warmanie, Moco Moco, Kumu and Matapee Creeks and in the dry periods Itchy and Jawarie ponds.



Kumu Hunting and Fishing Map

GATHERING RESOURCE USE SKETCH MAP

As shown on the map the village is located close to the mountain. The map shows an area of flat land forest before reaching the mountain foot.

The map also reveals that the community does not penetrate far into the mountains for gathering activities. However it should be noted that special materials like nibi, balata, axe handle, caramani, turo, lou, fishing rods and bush medicine are done in the mountains.

Kumu Gathering Map

FIELD OBSERVATION

INTRODUCTION

Kumu bush team atop Schaumburg's' Peak

The fieldwork that was conducted in Kumu was coordinated with that done in St. Ignatius and Quarrie. A meeting was held in St. Ignatius to decide the routes and the composition of the teams. In total six teams were sent out. Two of the teams departed from Kumu and included participants from the St. Ignatius CRE. Team B also includes Oscar Skybar a Patamona from Chenepau Village near Kaieteur Falls National Park, who was present to observe the CRE process.

The fieldwork was done over a period of four days. Before the fieldwork began the members of the "bush team" received training on:

- How to use a GPS unit
- How to complete data forms

There were eight persons on each team.
The teams were grouped according to the areas that had to be covered. Each team observed and geo-referenced areas found along the way in each of the resource categories: farming, hunting & fishing and gathering.

Participants learning to use the GPS

Kumu bush team, including Patamona observer Oscar Skybar, left, who geo-reference the farming grounds

A CRE team member led each team but all members of the team actively contributed to the information collected.

The reports that follow reflect observations and information gathered from the entire group. The information is presented individually, for each team including, who was on the team, the areas that were covered, and general observations. The team have been divided into team A, B and C.

TEAM A

Vitus Antone (CI)
Harry Pedro (Saint Ignatius)
Aaron Tacoordeen (Saint Ignatius)
Charles Francis
Michael Juan
Vernon Ignacio
Phillip Ignacio
Mark Joseph
Sena Juan

AREAS COVERED

The furthest point covered was **Arrow Creek**. The general location of the route undertaken on this trip was southeast from **Schomburgk's Peak.** Camps were set up at the following places: First camp at **Kumu Creek Head, Alligator Camp** (the furthest point which is 16 miles from the village), **Arrow Creek** and **Turtle Camp**. On this trip there was also an opportunity for a visit to **Kumu Falls** and a hike to Schomburgk's Peak.

A panoramic view of the Kunuku Mountains

OBSERVATIONS

The entire trail that the team covered was a recently established one. The area is not visited frequently except for special occasions Trips are made mainly during the dry season when large groups go out to hunt. The trails in the rainy season are wet and slippery and can be a hazard.

Most of Kumu's resource gathering activities are concentrated within forested areas in the mountain foot.

The area over the mountain is very pristine and is rich in resources. It is a good hunting ground especially for wild hogs.

In one area a quantity of nibbi of high quality was observed. There is also a special mountain named Hiari Mountain where fish poison is gathered. No farming activity is done in this area.

Certain resources such as caramani, balata and turo are only found up the mountains.

TEAM B

Sebastian Tancredo (CI)
Oscar Skybar (Patamona)
Vincent Paulo
Lawrence Torquarto
Gilbert Raymondo
Dennis Valerio
Albert Peters
Desmond Ignacio
Tony Campion

AREAS COVERED

The furthest point visited by the team was Waramani Falls (hunting/fishing area). Other areas covered by the team include:

- **Luke Water** (gathering area)
- **Matapee Falls** (fishing, gathering and hunting area)

OBSERVATION

A gum tree identified by a bush member

The farms that were visited are located mainly at the Bush Mouth with some along the Mountain Foot. In some areas the land is very low and gets flooded during the rainy season as was observed during the field trip. All farms along the Bush Mouth were completely under water.

The soil type is mostly sandy and suited for crops such as peanuts, yams and bananas. There was hardly any high forest areas or large trees. At Kumu Head it was observed that yam was growing plentifully. According to one of the participants, Vincent Paulo, the yams were used as the main food staple during times of shortage.

Capadula, a liana use for medicinal purposes as well as drinking water

Most of the farms are now located at the Mountain Foot. This area has virgin land with high forest and good soil. Crops in these areas grow well and produce high yields. It was observed that the farming area was very rich. Several of the farms are located close to each other.

The mountains are used to get materials for the household; craft materials, medicine, caramani and wild fruits. Along the Jawarie Creek materials are gathered in many of the areas that were

visited. It was observed that the house materials are plentiful especially at Crapo Pond and Haiari Hill. The entire village comes here to collect their housing materials such as round wood, leaves and some lumbering is also done here. It was observed that red wood (Paurine) is also plentiful here.

A youngster displays his catch, a piab

Hunting is done both in the savannah and along mountain foot. During the trip it was observed that many games/animals are along the mountain foot. There were many deer, labba and tapir tracks. According to information gathered from the participants, hunting is done for special occasions such as birthdays, Christmas, Saint John feast day.

The main fishing areas were pointed out as Matepee and Warmanie falls where fishes like houri, cassi and piabs can be caught. Cast nets, fine eye seine and bottle are used to catch fishes.

Itchy Pond (named because of an itch causing grass that grows in the pond) is one of the major fishing grounds and the entire village goes there to do fishing. Fishing is done throughout the year especially during the dry season when they are plentiful and easier to catch.

DATA RESULTS

INTRODUCTION

Over a four-day period the fieldwork was conducted in the areas that were identified on the Resource Use Sketch Maps. A description of each of these trips was reported under the Field Observation section. The purpose of the exercise in addition to observation was to geo-reference the areas of furthest use. This was done using a Global Positioning System (GPS) unit and a data form, which is described below.

The entire participant group was given training on how to use the GPS units and the bush teams received additional training in addition to that received by the group. The bush teams were also shown how to record data on the data forms. The information presented in this section is therefore the result of the work that was recorded by the "bush teams".

The results of the geo-referencing exercise are presented in this section of the report. The information is presented in the forms of bar graphs. The graphs are used to show the main threats to the area visited, the intensity and quality of use in the areas that were visited.

Each graph is followed by a description of the information that is represented on the graph. The information is presented in for the three resource use categories, farming, hunting and fishing and gathering.

DATA SUMMARY

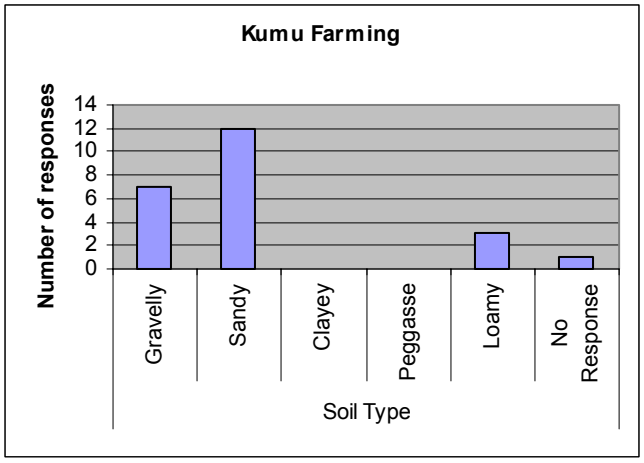
In total fifty-four (54) waypoints were taken. The following is a summary of all the waypoints that were taken in each category

- **Farming 23**
- **Hunting 11**
- **Fishing 5**
- **Gathering 15**

FARMING DATA RESULTS

QUALITY

The soil type in the majority of farming areas visited was sandy (12) and gravelly (7). **see graph**

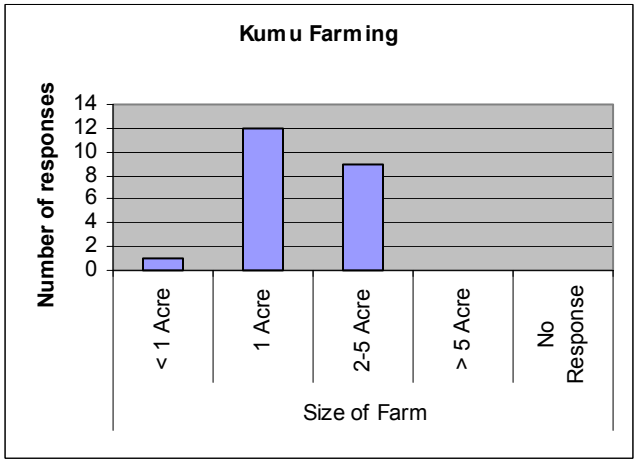


The crops planted on the farms are mainly mixed crops (10) cassava (7) and banana (6).

INTENSITY

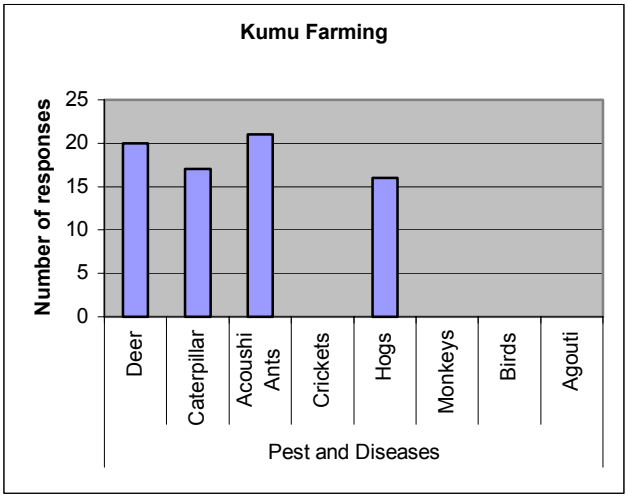
The farms that were visited are concentrated in the bush (17) see graph. All of the farms are actively used.

The farms are mainly one acre in size (12) or 2-5 acres (9) **see graph**. Twelve of the farms use their crops for domestic use only and ten (10) for both sale and domestic use.



THREATS

There were no threats recorded at any of the sites. Several pests affect the crops: acoushi ants (21) deer (20) caterpillars (17) and hogs (16).

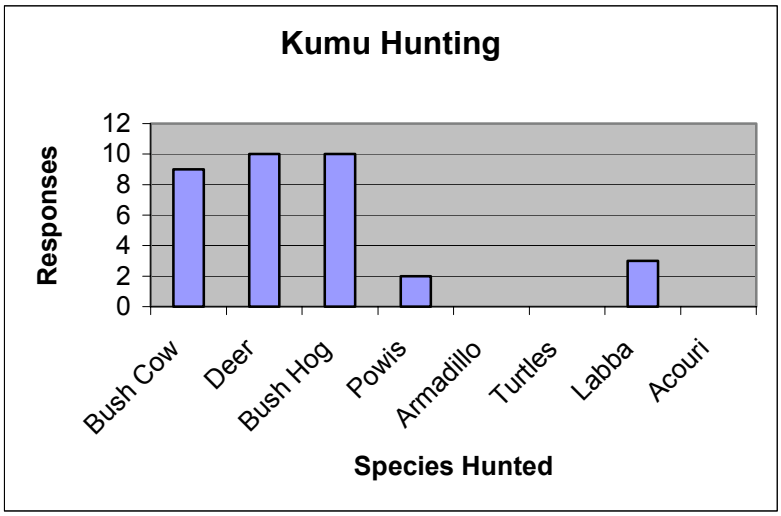


HUNTING DATA RESULTS

QUALITY

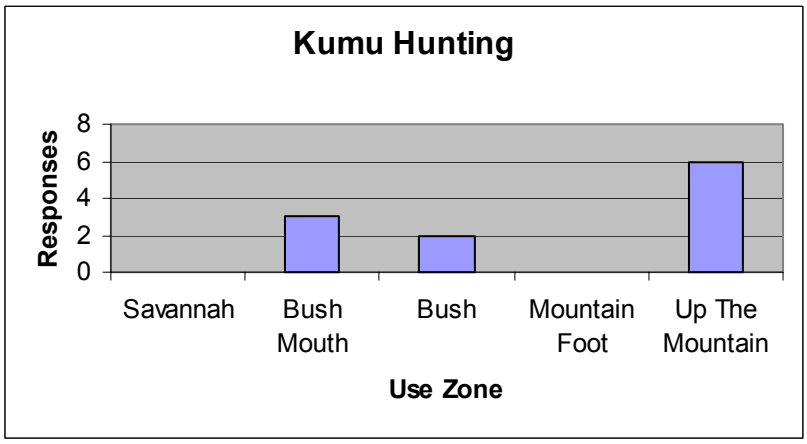
The quality of the hunting resources is considered to be excellent (11).

The game that are hunted were entered as bush hog (10), deer (10) bush cow (9) and powis (2). **See graph**

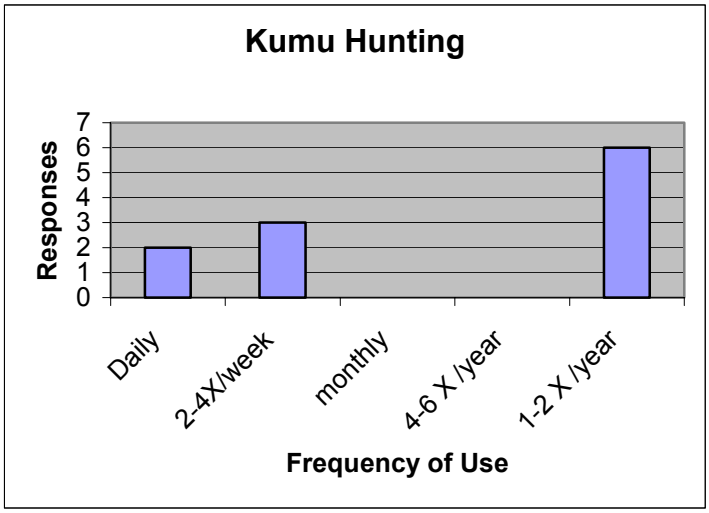


INTENSITY

The areas that were visited are concentrated up the mountain (6) and at the bush mouth (3) **see graph**. All of the sites that were visited are actively used.



Hunting is done in these areas mostly 1 – 2 times a year (6) and 2- 4 times per week (3). **see graph** The number of game is mainly between 3 – 10 game (6) or less than three (5). The sites are used for domestic use only.



Hunting is done using primarily traditional methods: bow and arrows (11) and hunting dogs (5), and modern methods, guns (9).

THREATS

There was only one threat recorded at one of the sites, logging (1).

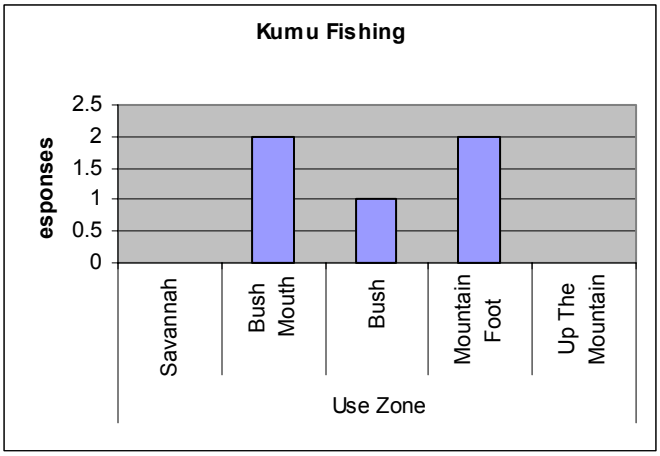
FISHING DATA RESULTS

QUALITY

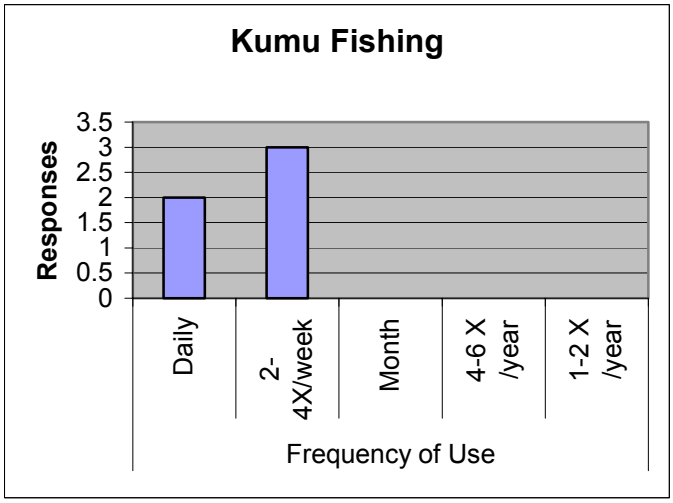
The condition of the fishing resources was considered to be excellent (4) and good (1). The fishes that are caught are houri (5) patwa (5), yarrow (5) piab (3) and kassi (3).

INTENSITY

Waypoints were collected in the mountain foot area (2), bush mouth (2) and in the bush (1). All of the sites visited were active.



The main methods used for fishing were hook and line (5), cast nets (5) and bow and arrows (5). Most fishing at the sites is done 2 –4 times per week (3) and daily (2). The catch is usually between 3 – 10 catch (2) and 10 – 20 (2) **see graph**.



Four of the sites are used for domestic use only (2).

THREATS

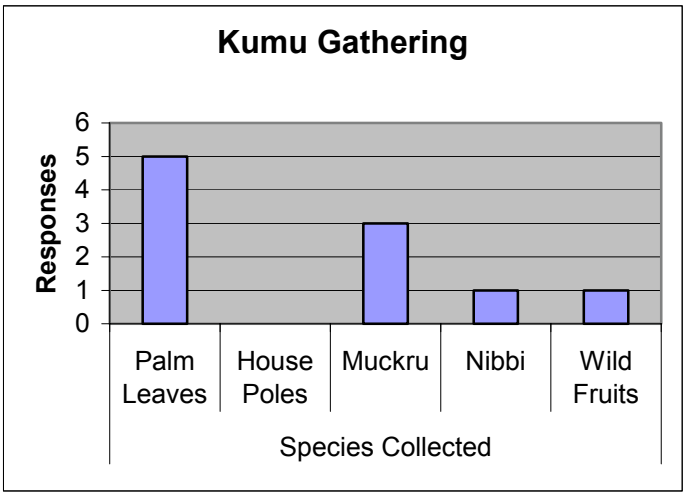
There were no threats recorded at any of the sites.

GATHERING DATA RESULTS

QUALITY

The gathering resource condition was recorded as being entirely “excellent” (12) and “good” (3).

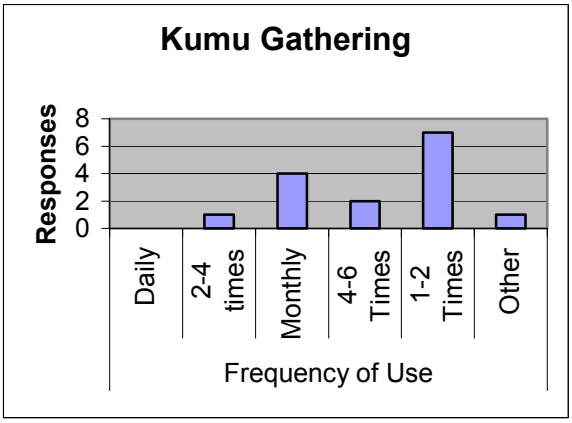
The resources collected are palm leaves (5) muckru (3) nibi (1) and wild fruits (1). **See graph**



INTENSITY

The gathering sites that were geo-referenced were spread out, with points recorded in the bush (5), up the mountain (5) at the bush mouth (3) and at the mountain foot (2). All of the sites that were visited are active.

Cut and carry (14) and tapping (1) are the methods used in these areas.



Gathering is done mainly 1-2 times per year (7) and monthly (4). **See graph**. Fourteen of the entries were used for domestic purposes only and one was for both sale and domestic use.

THREATS

There were only two threats recorded, logging (1) and poaching (1).

VILLAGE SURVEYS

INTRODUCTION

The village fieldwork was done over four days during the same period that the "bush teams" were doing field observation of resource use sites. The fieldwork focused on two main exercises-collecting surveys and conservation stories. The questions in the surveys were based on three specific areas (1) **threats** (2**) the quality** and (3) **availability of resources** in the village.

The participants were fully involved in every aspect of the village survey. The exercise began with a mini lecture on surveying methods. This was followed by the creation of a village sketch map from which the participants selected households to be interviewed. Each household was informed the day before and given the option to take part in the survey. The exercise ended with the compilation of the results that were gathered in the field.

For the completion of these exercises the participants worked in teams, each of which was headed by a CI staff member or a Community Coordinator.

In addition the village work had several other objectives:

- To provide general information to a *wider* representation of the village.
- To allow villagers to ask questions related to the CRE, Protected Areas or CI and have them answered
- To involve the school in an activity during the CRE

INTRODUCTION

The Village Team

Monkey
Paul
Lomas
Leonie
Petronella

The Village Team's work benefited from a very well organized and enthusiastic group. The village sketch map was easily created and the persons to be interviewed, identified. The participants went out themselves to notify the villagers whom they had selected. The team divided themselves into three teams, monkey, DES and lions.

Kumu is a very spread out community with several neighborhoods, Berbice, Cuba, Caracas, Kamana, Kumu Head and Central 1 & 2. The teams were able to cover households in each of these areas. In total 36 surveys were collected which represented a total of 67.92% of the total households in the village.

OBSERVATION

The Village Team

DES
Esther
Felicia
Nathaniel
Chris

The team worked very hard to meet with the wider community for the purposes of the survey and to take information to the villagers. It also provided an opportunity for people to ask questions since there was a lot of misinformation being spread in the community.

Villagers voiced their appreciation of being able to find out what was going on and what was going to happen next. Some of the concerns that the villagers had were:

1. Whether CI was in the village to "take away" their land?
2. What the benefits would be to the community?
3. Who would manage the Protected Area if one were established?

Most of the people who were interviewed were present at the closing public meeting.

The Village Team

Lion
Natalie
Brenda
Leonie
Petronella

VILLAGE SURVEY DATA RESULTS

PROFILE
THE ARTISTS WHO CREATED THE MASTER RESOURCE USE

Whilst the "Village Team" was out doing surveys and collecting stories from the village, Valentine, Terry and John created the Master Resource Use Map.

They first used pencils to draw on all the resources, roads and the village and then they painted it with water paints.

The map was left in the community to help the village in their own conservation efforts.

Valentine, Terry and John with their map

INTRODUCTION

Over a two-day period the fieldwork was conducted for the village survey. The village survey was an informal information gathering exercise. The households that were identified on the village sketch map by the participants were visited and surveyed.

For many people in the community, it was the first time that they had taken part in a Resource Use survey of this type. As a result they were asked to respond to questions and sections with which they felt most comfortable. In some cases, for example, women did not feel comfortable to answer questions as related to hunting even though they may accompany their husbands and actively hunt. Therefore the number of responses in some sections may vary.

The results of the village survey exercise are presented in this section of the report. The information is presented in the forms of tables. The tables are used to show the main threats, the intensity and quality of the resources.

The information is presented in the three resource use categories, farming, hunting and fishing and gathering.

VILLAGE SURVEY DATA SUMMARY

In total 36 surveys were collected. The following is a summary of all the data that was collected in each of the three resource categories:

- **Farming 36**
- **Hunting 10**
- **Fishing 35**
- **Gathering 29**

FARMING DATA RESULTS

INTERVIEWEES INFORMATION

Age

15-28	29-40	41-55	Above 55
5	13	9	9

Gender

Male	Female
18	18

INTENSITY

As can be seen in the table below, most of the people who were interviewed farm mainly in the bush mouth area (16) and at the mountain foot (11). Some persons also said that they farm Up the Mountain (7) and to a lesser extent in the savannah (3), in the bush (2) and in the deep bush area (2). There were several comments made: that there had been an increase in the population; the soil was very fertile although some persons also commented that the soil was less fertile than before.

Where is your farm?

Savannah	Bush	Bush Mouth	Deep Bush	Mountain Foot	Up the Mountains
3	2	16	2	11	7

Twenty people said that they visited their farms every day. Other responses that were given are: weekly (4) and two times a week (4). In the "other" response box some people said that they visited their farms every other day and "sometimes". **See table**

How often do you visit your farm?

Daily	2 x Week	3 x Week	4 x Week	Weekly	2 x Month	Other
20	4	1	2	4	1	4

The size of most of the farms of the people who were interviewed was stated as being mainly between 2-4 acres (16) and 1 - 2 acres (12). **See table**

How big is your farm?

< 1 Acre	1>2 Acre	2-4 Acre	5 Acre and more	Other
6	12	16	1	1

The produce of most of these farms is used for both domestic purposes and for sale. Twenty-four (24) persons gave this answer. Ten (10) persons used their farm produce in the home only.

THREATS

Wild animals (25) and acoushi ants (23) were felt to be the main threats to farm crops. To a lesser extent the weather (7), monkeys (4), domestic animals (3) and caterpillars (3) are also seen as threats. In the "other" responses box it was said that the increase in the population was also felt to be a threat (3). **See table**

What are the threats to your crops?

Wild animals	Acoushi ants	Weather	Caterpillar	Fire	Monkey	Domestic animals	Other
25	23	7	3	0	4	3	3

HUNTING DATA RESULTS

INTERVIEWEES INFORMATION

Age

15-28	29-40	41-55	Above 55
1	4	3	2

Gender

Male	Female
7	3

QUALITY

The majority (9) of persons who were interviewed said that they felt that they had to go further that they did in the past. Nine (9) persons also said that there had been a change in the availability of resources while one (1) said that there had not been a change. Some of the comments that people made were that the increase in the population and use of hunting areas by Brazilians had all contributed to the change in resource availability.

Has there been a change is the availability of resources?

Yes	No
9	1

INTENSITY

Most of the persons who were interviewed said that they hunt at the mountain foot (5) and Up the Mountain (3). **See table**

Where do you hunt?

Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain	Deep Bush
0	0	2	5	3	0

The methods used for hunting includes the use of bow and arrows (4) hunting dogs (1) and guns (1). Hunting is mainly done on a weekly basis (6). **See table**

The game that is caught is being used mostly in the home for domestic use (6) and for both sale and domestic use (4).

How often do you hunt?

Daily	2 x Weekly	Weekly	Monthly	Yearly	Seasonally	Other
0	1	6	0	1	0	1

THREATS

The main threat to the hunting sites was felt to be fire (7). The increase in the population (3) and over-hunting (1) were also stated.

What are the threats to your hunting resources?

Over-Hunting	Tiger	Weather	New Methods	Fire	Population	Other	No Response
1	0	0	0	7	3	2	1

FISHING DATA RESULTS

INTERVIEWEES INFORMATION

Age

15-28	29-40	41-55	Above 55
5	13	9	8

Gender

Male	Female
18	17

QUALITY

Twenty-seven (27) of the persons who were interviewed said that they had to go further to fish that they did in the past. Seven people felt that they did not have to go further. Twenty-five (25) persons said that there had been a change in the availability of resources while eight (8) said that there had not been. **See table** The main comment that was made as to why it was felt that people had to go further was the increase in the population.

Has there been a change is the availability of resources?

Yes	No	No Response
25	8	2

INTENSITY

The main hunting areas as stated by the persons who were interviewed are as follows: in the bush (9), in the savannah (7), at the mountain foot (5), up the mountain (4) and in the deep bush (1). **See table**

Where do you hunt?

Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain	Deep Bush	No Response
7	0	9	5	4	1	9

Several new methods of fishing are being used in the village: hook and line (30), seine (21) and cast nets (6).

Fishing is done regularly. As can be seen in the table below most people said that they fish either every day (11) or every week (10). **See table** The fish that is caught it used mainly for domestic use only (22), sale (3) or both sale and domestic use (10)

How often do you fish?

Daily	2 x Week	3 x Week	Weekly	3 x Month	Monthly	Other
11	6	1	10	1	2	4

THREATS

The major threats to fishing sites were given as the increase in the population (16), fire (11) and poison (10). To a lesser extent new methods of fishing (4) outsiders (2), over fishing (1) and the weather (1) were also stated.

What are the threats to your hunting resources?

Over-Hunting	Poison	Weather	New Methods	Fire	Population	Outsiders
1	10	1	4	11	16	2

GATHERING DATA RESULTS

INTERVIEWEES INFORMATION

Age

15-28	29-40	41-55	Above 55
3	10	9	7

Gender

Male	Female
16	13

QUALITY

Twenty-two (22) persons who were interviewed said that had to go further to gather materials than they did in the past six (6) persons said that they didn't feel that they had to go further.

Eighteen (18) persons said that they felt that there had been a change in the availability of resources and ten (10) persons said there had not been a change. Some of the comments made were that the change in availability was due to the increase in the population and the increase in fire.

Has there been a change is the availability of resources?

Yes	No	No Response
18	10	1

INTENSITY

Most people said that they gathered materials at the mountain foot (15). Other areas that were used are in the bush (6) at the bush mouth (3) and up the mountain (5). **See table**

Where do you gather?

Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain	Deep Bush
0	3	6	15	5	0

Gathering is done mostly once a year (11) and the materials that are gathered are used for domestic purposes only (18). **See table** The materials that are gathered are also sold by four persons (4) and six (6) persons said that they used the materials for both sale and domestic use (4).

How often do you gather?

Daily	2 x Year	Yearly	Every 5 Years	Every 2 years	Quarterly	Seasonally	No Response
1	4	11	4	2	0	0	1

THREATS

The major threat to gathering resources was felt to be fire (12). There were also other notable threats such as wood ants (8), the increase in the population (7) and the use of resources by outsiders (3).

What are the threats to your gathering resources?

Wood ants	Outsiders	Population	Fire	Other	No Response
8	3	7	12	3	4

CLOSING ACTIVITIES

The CRE concluded with a series of activities. The first such activity was a presentation that was made by the village team participants to the school children. This presentation was done to explain to the older school children the work that was done during the workshop it included:

Presentation of the village survey data

- The resource lists
- The seasonal calendar
- The sketch map
- The results of the village survey

It was also an opportunity for the participants to share the knowledge that they had with their students, which included the local names of some resources and stories.

On the last day of the workshop the bush and village teams met after being apart for four days. At this last meeting the two teams used the time together to tell each other of their experiences during the village survey and field observation exercises.

The workshop was closed with a village public meeting. The public meeting was an opportunity to share with the other villagers the work that they had done, their experiences and their knowledge of the mountains, of their resources and of the seasons of resource use. This knowledge was often a real learning experience for other members of the community who may not have been aware.

Part of the crowd at the final public meeting

The final meeting was done mainly in the local language and the participants themselves did all of the presentations using photos to communicate their experiences.

The participants were also presented with certificates of participation.

RESOURCE USE PROFILE

The resource use profile is an outline of how the village uses the resources based on the information that was collected during the CRE in the **resource discussions, data forms, village surveys** and in the **field observation**. The purpose of the resource use profile is to show:

- **The main areas that are used by the community**
- **The factors that affect the use of the resources**

Kumu village is located about three miles form the Kunuku Mountains on the western side. It was geo-referenced at 3.29919°N and 59.72278°W. Members of this community are very active farmers because it is a source of both food and cash for the people. Villagers also depend on the mountains for many other resources, their building materials, medicines, game and fish. The availability of resources is supplemented by the village's close proximity to St. Ignatius, Lethem and the Brazilian border. These areas provide a market for produce, opportunities for employment and an alternative source for food and supplies.

This report takes into consideration, all the areas that were identified by the community and, particularly the areas visited by the "Bush Teams", in a collaborative effort involving the village participant group and members of Conservation International Guyana team. The participant group related their resource use via the tools created during the workshop in the areas of:

- Hunting
- Fishing
- Farming
- Gathering

RESOURCE USE "ZONES"

All the communities are located in the savannahs with some situated closer to the mountains than others. Use occurs in different areas with specific characteristics from the savannah to the mountains known by the communities as follows:

SAVANNAH

The savannah areas are the wide-open grasslands with scattered bushes dominated by the characteristic sand paper tree (*Curatella Americana*). There are low land savannahs and high land savannahs that are found in the mountain valleys.

BUSH MOUTH

The community describes this area as where the main savannah land ends and the bush or the forest begins, extending approximately one mile into the bush. The vegetation of this area is typically secondary growth with the majority being fallow lands or old minabs, as the villagers call them. This term 'bush mouth' is used commonly when relating to the activities done within this particular area. For example, if a villager has a farm in this area, he would always refer to it as his/her bush mouth farm. So bush mouth areas generally do not have names unless they are close by a creek or some other natural feature. Bush teams observed and geo-referenced sites in the Bush Mouth including: **Matapee Bush** and **Itchy Pond.**

BUSH
The term bush relates to the area between the end of the bush mouth and where the mountain foot area begins. The extent of the bush size varies in each community, depending on the amount of forested area between the bush mouth and the mountains. In communities with extensive bush the far areas are referred to as the 'deep bush'. The deep bush is not usually farmed, but is used for hunting, gathering or fishing activities. The vegetation of the bush is mainly primary forest with minimum canopy opening due to minimal of human impact.
Areas observed and geo-referenced included: **Matapee Creek** and **Kumu Creek.**

MOUNTAIN FOOT
This area lies within a mile range before the mountain slopes. The mountain foot areas are very fertile with a cooler climate and very favourable for crops. Communities that are located closer to the mountains prefer to use mainly these areas for farming. From the farms access is gained to the surrounding areas as well as up the mountains for resource use. Access to the mountains requires passage through the mountain foot. **Kumu Falls, Hiari Creek** are among the sites geo-referenced.

UP THE MOUNTAIN
This refers to all the areas beyond the mountain foot, up and into the mountains. All mountain areas are very rich for resources such as nibbi, caramanni, balata, medicine and game due to the forest being untouched. Hunting is the primary activity up the mountain due to the abundance of game animals with some amount of gathering carried out at the same time. Bush teams visited several sites in this area, including: **Arrow Creek, Kumu Creek Head, and Alligator Camp**

Main activities are generally carried out in the following areas:
- **Farming – bush mouth, bush, creeks banks**
- **Hunting – main rivers, creek, mountains**
- **Gathering – mountains**
- **Fishing – main rivers, creeks**

QUALITY

The closeness of the community to the Kanuku Mountains has resulted in very rich soil available for farming. Farms are located mainly in the bush mouth area and at the mountain foot. In some parts in the bush mouth area, yields are affected by the lowness of the land, which results in flooding during the rainy season. The farms along the bush mouth are completely inundated during the rainy season so they are seasonal farms where short-term crops are planted and have to be reaped before the rains come. The bush mouth farms are mainly to plant short-term cassava and paddy, rice and corn. There are also gravel farms (crops that are planted in gravel areas on gravel hills), which are used to plant long-term cassava and are not affected by flooding. As a result of the flooding, most of the farms are now located at the mountain foot which has virgin lands with high forest and good soil. Crops in these areas grow well and produce high yields.
The results of the data forms show that the areas of resource use that were visited by the team were generally considered to be in either "good" or "excellent" condition. This was especially in areas such as: **Crapo Pond, Hiari Hill, Itchy Pond and Hiari Falls.**

The waterfalls; **Kumu Falls, Warmanie** and **Matapee Falls,** along with the **Takatu River** are used as multiple resource areas, so hunting, fishing and gathering is often done simultaneously. There are certain times when specific species of game or fishes can be found in exceptional amounts such as piab season or during fish march in July and August. On these occasions villagers go out just for that resource.

There is also evidence that the resource availability has changed as the village survey shows that most people feel that they have to go further than they did in the past to collect resources and that the resources are less that they used to be. The factors influencing this include the growth in the population, the use of resources by outsiders, and fire. Hunters use fire to chase animals out of an area. During the dry season in particular, large sections of bush/forest are often destroyed in the process.

INTENSITY

Use Zone

Kumu	Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain
Farming	0	5	17	1	0
Hunting	0	3	2	0	6
Fishing	0	2	1	2	0
Gathering	0	3	5	2	5

The above table shows the areas or "zones" the bush team visited, and the number of geo-referenced points recorded in each one.

The data above indicates that Kumu's resource use, in the areas observed, occurs in all zones except the savannah area. This does not imply that the savannah is not being used. It simply reflects the resource use areas geo-referenced on the routes chosen by the villagers during the CRE bush trips.

Different sections of the community for instance Cuba, Berbice, Caracas, Central One and Two, and Marakanatuba all farm in the forested area from the bush mouth to the mountain foot, in areas such as **Matapee Creek, Crapo Pond, Manicole Creek, Hiari Creek, Gold Creek** up to **Dragon Falls**, making farmlands widely spread out. Farming is more concentrated in the bush zone since the soil is more fertile there. Most farms are old ones that have been used for a long time and are gradually extended depending on the demand and productivity of the soil.

There is also some farming that is done downstream of the **Moco-Moco, Matapee,** and **Luke Water Creeks**. The farm size is mainly between 1 – 2 acres and is essentially used for domestic purposes. The villagers of St. Ignatius also use the same area for farming, gathering, hunting and fishing.

Most of the hunting grounds are found in the mountains. This is mainly on the eastern face of Kumu Mountain over Schomburgk's Peak where the forest is in its pristine state. Game animals are found in abundance on this side. Many of the gathering materials that are scarce or not found

within the bush area are available here, so when in need the villagers go out to collect them. The further areas up the mountain are used to a lesser extent. The data forms show that these places are visited 1 – 2 times a year for specific purposes such as to collect fish poison, nibbi etc. Certain resources such as caramani, balata and turo are only found up the mountain.

The main fishing grounds are the **Kumu Creek, Matepee Falls** and **Moco-Moco Creek** in the bush mouth and bush areas. Fishing does not extend up the mountains because hardly any fishes are found there except some piabs or mountain yarrows. Some ponds exist that are main fishing grounds e.g. **Itchy Pond**, which is also use by the villages of Quarrie and sometimes St. Ignatius. Today fishing is an activity that is done on a small scale in Kumu resource use area. This is because the fish population has greatly declined and not many big fishes are found today, due to the excess use of tangle seine and diving with facemask.

THREATS

There were few threats reported in the data forms by the bush teams. The few entries that were made were for acoushi ant, wild animals (deer and hogs) and caterpillars. These threats mainly affect the farm produce. Apart from the loss of produce and income, these threats, particularly the acoushi ant, can force farmers to retreat further up the mountains where they will be less of a problem.

Logging and poaching were also noted to a lesser extent. These threats are linked to the closeness of the village to Lethem, and the presence of good roads allows for Kumu's resources to be easily accessed by outsiders. In the village survey the results show that villagers also consider population increase and fire to be a threat to their resources.

SITE GEO-REFERENCE POINTS

The table below shows the sites observed and geo-referenced during the CRE Bush Team fieldtrips. The readings were taken with Global Positioning Units (GPS). Heavy clouds or tree cover can make it difficult to get a perfect reading, so all geo-references should be considered approximate, generally within 25 meters. This is part of the information recorded by the participant team members while observing resource use sites. The site names are spelled in the table, as the team recorded them, so there is sometimes more than one spelling for the same site. The following information is listed:

- **Site Type**-this allows what type of resource use happens at this site. Some areas are multiple use, that is, more than one type of resource is used, so this type of site is listed for each resource use checked on the data form
    - **F = Farming**
    - **H = Hunting**
    - **FS= Fishing**
    - **G = Gathering**
- **Village –** location of site.
- **North –** the North or latitudinal reading. This number is shown in "decimal degrees", or how many degrees North of the Equator (0°) the site is located.
- **West –** the West or longitudinal reading. This number is given in "decimal degrees" showing how many degrees west of the Prime Meridian (0°) the site is located
- **Area Name –** the name of the site as recorded by the teams on the data form. When the site had no specific name this line is left blank.
- **Site Zone –** the "zone" or geographic location of the site. At times one site name applies to several zones, as a creek that may flow from a site "Up the Mountain" all the way out into the savannah.
    - **Savannah**
    - **Bush mouth**
    - **Bush**
    - **Mountain Foot**
    - **Up the Mountain**

Site Type	Village	° North	° West	Area Name	Zone
F	KM	3.29532	59.70778	Matapi Creek	Bush Mouth
F	KM	3.28254	59.74671	Warmanie Creek	Bush Mouth
F	KM	3.27621	59.73288		Bush Mouth
F	KM	3.27869	59.75231		Bush Mouth
F	KM	3.27939	59.745		Bush Mouth
FS	KM	3.27405	59.75492	Itchy Pond	Bush Mouth
FS	KM	3.29159	59.69055		Bush Mouth
G	KM	3.29858	59.67854		Bush Mouth

Site Type	Village	° North	° West	Area Name	Zone
G	KM	3.2917	59.70968		Bush Mouth
G	KM	3.29334	59.69092		Bush Mouth
H	KM	3.27847	59.75319	Itchy Pond Hill	Bush Mouth
H	KM	3.29919	59.67866		Bush Mouth
H	KM	3.29159	59.69055		Bush Mouth
F	KM	3.26386	59.73939	Hiarie Creek	Bush
F	KM	3.26952	59.72878	Kumu Creek	Bush
F	KM	3.26977	59.72348	Kumu Head	Bush
F	KM	3.26322	59.7265	Manicole Creek	Bush
F	KM	3.28316	59.69453	Matapi Creek	Bush
F	KM	3.28353	59.69564	Matapi Creek	Bush
F	KM	3.26537	59.73173	Warmanie Creek	Bush
F	KM	3.26296	59.72904	Warmanie Creek	Bush
F	KM	3.2634	59.73017	Warmanie Creek	Bush
F	KM	3.26964	59.74603		Bush
F	KM	3.27105	59.74436		Bush
F	KM	3.26945	59.73994		Bush
F	KM	3.26905	59.74936		Bush
F	KM	3.26606	59.74964		Bush
F	KM	3.2655	59.75098		Bush
F	KM	3.27144	59.75167		Bush
F	KM	3.2711	59.7538		Bush
FS	KM	3.27678	59.73143	Kumu Creek	Bush
G	KM	3.2673	59.73971	Harrie Hill	Bush
G	KM	3.28937	59.69806		Bush
G	KM	3.266	59.73396		Bush
G	KM	3.27255	59.75291		Bush
H	KM	3.26216	59.72727	Manicole Creek	Bush
F	KM	3.26362	59.74149	Goold Creek	Mountain Foot
FS	KM	3.26362	59.74149	Hiarrie Creek	Mountain Foot
FS	KM	3.26014	59.72994	Waramanie Falls	Mountain Foot
G	KM	3.26455	59.72258	Kumu Falls	Mountain Foot
G	KM	3.26517	59.72328	Kumu Falls	Mountain Foot
G	KM	3.21045	59.70001	Bambo Area	Up the Mountain
G	KM	3.22442	59.68657	Hiarrie Mountain	Up the Mountain
G	KM	3.25601	59.70912	Kumu Falls	Up the Mountain
G	KM	3.2507	59.69423	Manicole Creek	Up the Mountain
G	KM	3.26404	59.71692		Up the Mountain

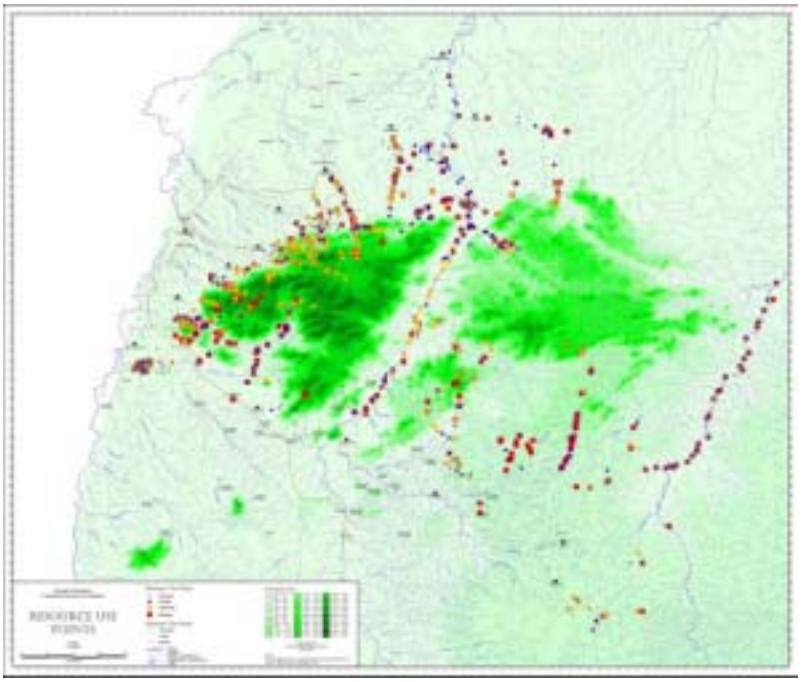
Site Type	Village	° North	° West	Area Name	Zone
H	KM	3.2331	59.67488	Adorie Camp	Up the Mountain
H	KM	3.24413	59.66857	Alligator Camp	Up the Mountain
H	KM	3.21025	59.70058	Arrow Creek Camp	Up the Mountain
H	KM	3.23186	59.68151	Copa Camp	Up the Mountain
H	KM	3.23683	59.70188	Eara Creek	Up the Mountain
H	KM	3.23162	59.68146	Lillia Creek	Up the Mountain
G	KM	3.28459	59.70813	Crapo Pond	
H	KM	3.26581	59.73484	Cedar Creek	

THE RESOURCE SITE MAPS

The following maps are digitized, or computer created, representations of the locations of the sites observed during the CRE fieldwork. The locations or "points" appear on a background that shows the area covered during these field trips in each village. This background is based on the official topographic map of Guyana published by the Guyana Lands and Surveys Department in 1964. The positioning of the rivers, creeks, and roads, and many of the place names come from this official map, which is now nearly 40 years old. This is the reason that some of the names on the map may be spelled differently than they are spelled today. Also some other features may have changed, such as the location of roads, or even smaller creeks, which may have changed direction or ceased to flow.

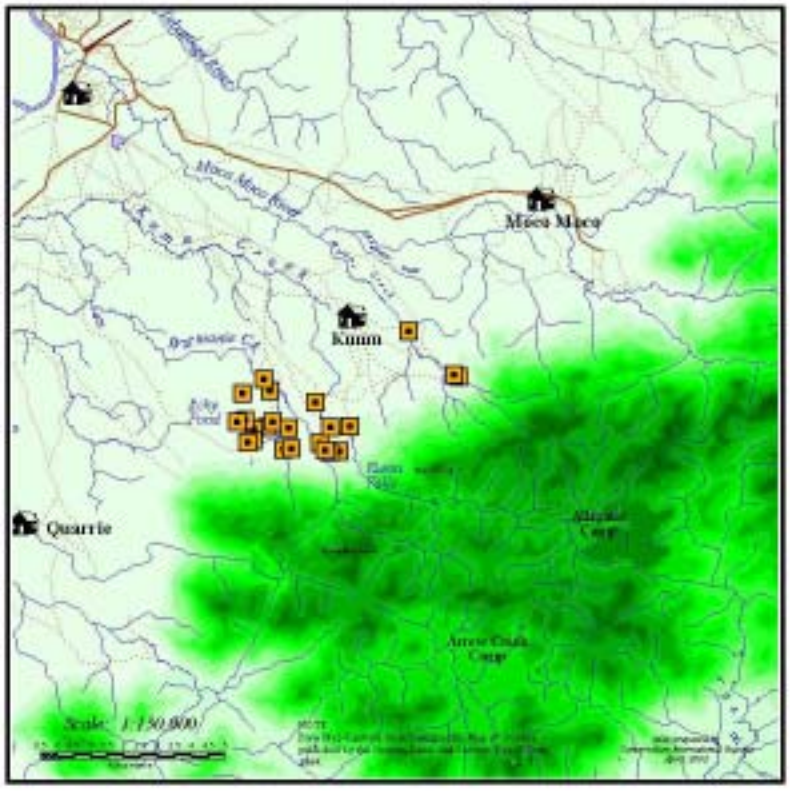
The readings or geo-reference points taken at each site with the Global Positioning Unit (GPS) are transferred to a computer, which also contains the sections of the official map with the information on the Kanuku Mountain area. A computer program called "ArcView" places the points on the map according to the position recorded by the GPS when the bush team members took the reading.

There is a separate map for each resource category as well as a combined map that has all the readings taken during the CRE. It is important to remember, when viewing the maps, that they represent only a record of sites observed during specific trips made during the CRE. These maps do not show every area a community uses, but show the sites along the routes chosen by the teams to reach, as far as was possible, the furthest areas of community use, and the most important use areas.

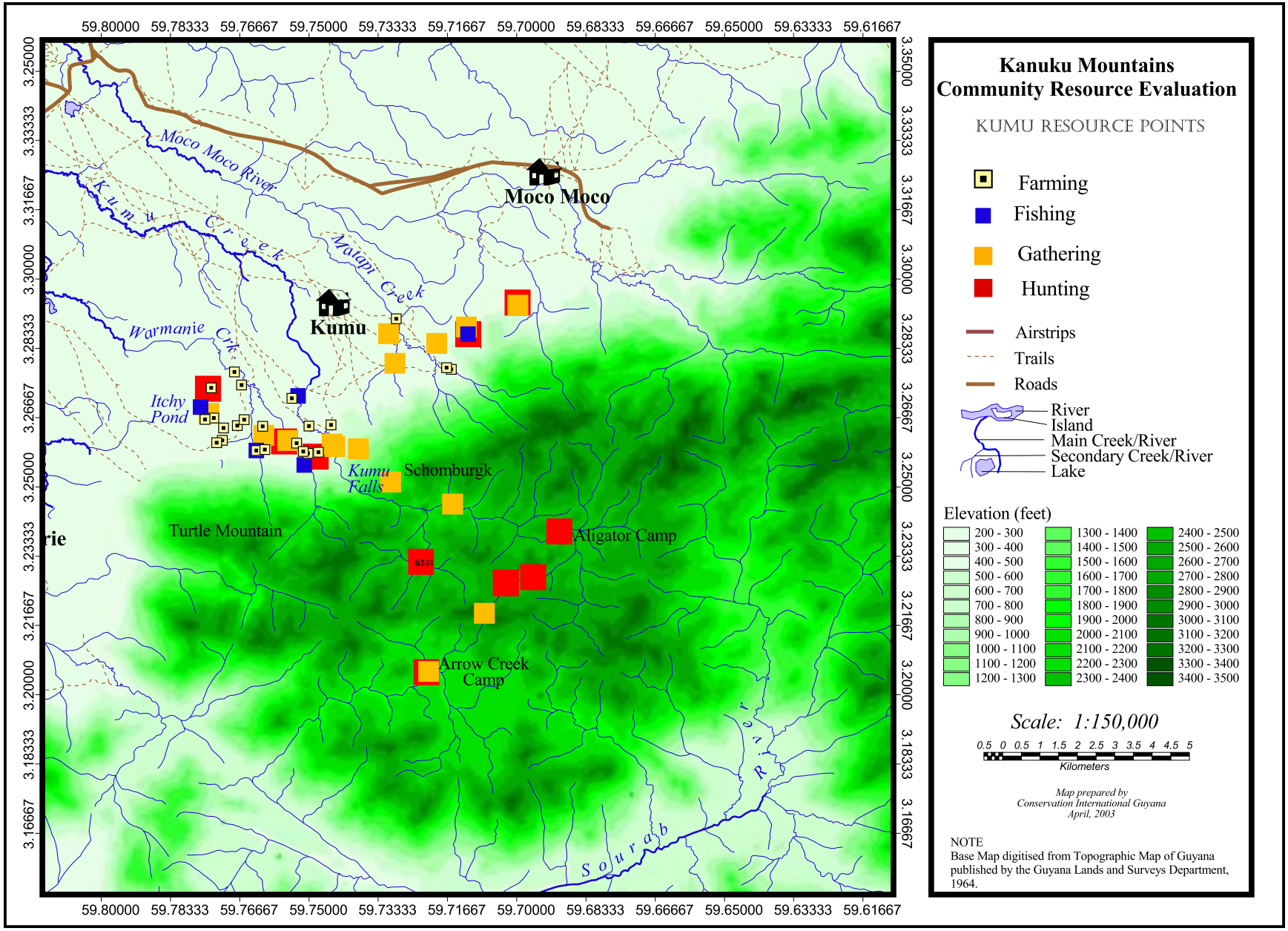


In some cases, flooding prevented access to some areas, especially those normally reached via creeks. In this case, readings were taken at a creek mouth, to record the area, while the use is described in the report. In order to have a complete understanding of the resource use areas, it is important to study the resource sketch maps along with the formal digitized maps. It is the sketch maps that show all the areas recorded by the CRE participants as representing their resource use.

As part of the CRE project, a digitized map of the entire Kanuku Mountain Range was also produced in the same way that the individual village maps were produced. This map shows all the resource point readings (1, 376) taken during all the CRE workshops. Again is important to note that the Kanuku Mountains map is a record of the results of the 47 field trips made during the CRE's.


Moco Moco
Kunun
Quarrie
Scale: 1:150,000


KUNU
HUNTING
Active Hunting Site
Inactive Hunting Site
Status Not Stated
Moco Moco
Kunun
Quarrie
Scale: 1:150,000


59.80000 59.78333 59.76667 59.75000 59.73333 59.71667 59.70000 59.68333 59.66667 59.65000 59.63333 59.61667
3.25000 3.33333 3.31667 3.30000 3.28333 3.26667 3.25000 3.23333 3.21667 3.20000 3.18333 3.16667
Moco Moco River
Kumu Creek
Malapi Creek
Warmanie Crk
Moco Moco
Kumu
Itchy Pond
Kumu Falls
Schomburgk
Turtle Mountain
Aligator Camp
h241
Arrow Creek Camp
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Community Resource Evaluation
KUMU RESOURCE POINTS
Farming
Fishing
Gathering
Hunting
Airstrips
Trails
Roads
River
Island
Main Creek/River
Secondary Creek/River
Lake
Elevation (feet)
200 - 300
300 - 400
400 - 500
500 - 600
600 - 700
700 - 800
800 - 900
900 - 1000
1000 - 1100
1100 - 1200
1200 - 1300
1300 - 1400
1400 - 1500
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2500 - 2600
2600 - 2700
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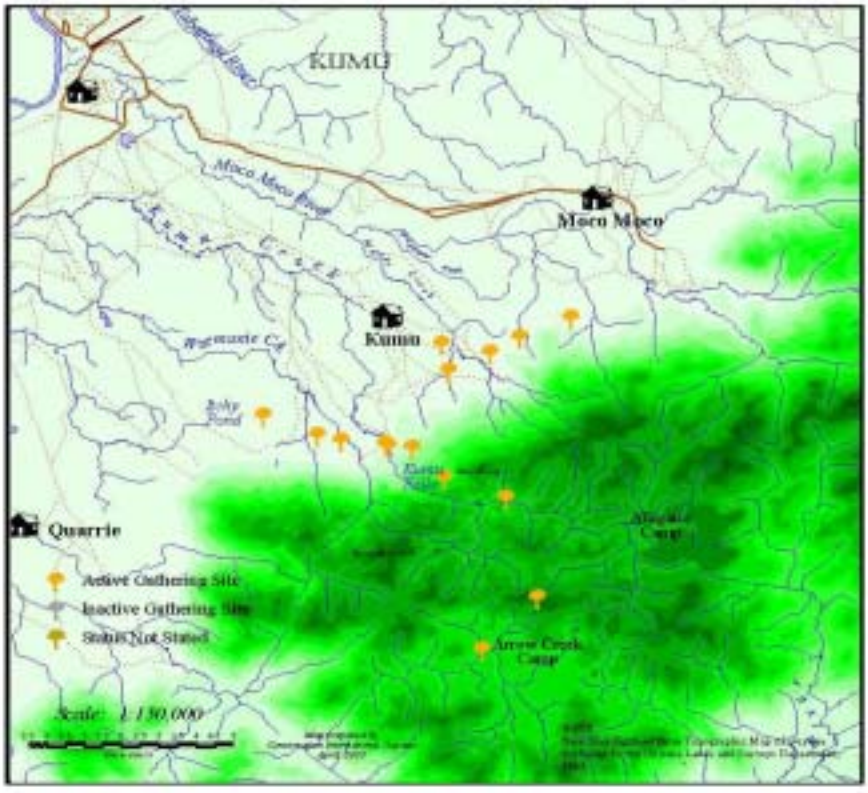
2800 - 2900
2900 - 3000
3000 - 3100
3100 - 3200
3200 - 3300
3300 - 3400
3400 - 3500
Scale: 1:150,000
0.5 0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5
Kilometers
Map prepared by
Conservation International Guyana
April, 2003
NOTE
Base Map digitised from Topographic Map of Guyana published by the Guyana Lands and Surveys Department, 1964.


Moco Moco
Kumu
Quarrie
Active Fishing Site
Inactive Fishing Site
Status Not Stated
Scale: 1:150,000


KUMU
Moco Moco
Kumu
Quarrie
Active Gathering Site
Inactive Gathering Site
Status Not Stated
Scale: 1:150,000

CONCLUSION

Reviewing the resource points on the small maps, Quarrie.

The Community Resource Evaluation Workshop was a learning experience for all involved. A great quantity of information was gathered and shared by the community participants. The results of the fieldwork and the draft copies of the resource site maps were returned to community for feedback and verification during a workshop in March 2003. Feedback and corrections were incorporated into the final report.

Explaining the results of the village survey data, Parikwraranau.

This information is now in a database, which is a computer program that organizes information in a way that it can be read and studied. This database of information will be used to help decide about the best type of protected area to propose for the Kanuku Mountains. It is also a valuable tool for the communities to use in communicating their resource use patterns.

In addition to this report, each village will receive a copy of all the data forms filled out on the bush trips, and all the surveys and evaluation forms completed during the CRE and Results workshops. The information will also be available to members of the communities at Conservation International's Lethem field office.

Verifying the seasonal calendar, Rupunau.

Copies of the village reports will be given to those government entities, and donor agencies involved in the protected areas process in Guyana including:

Environmental Protection Agency
Lands and Surveys Department
Forestry Commission
Minister of Amerindian Affairs
Regional Democratic Council
Office of the President
United States Agency for International Development (USAID)
The World Bank

Reading their CRE reports, Maruranau.

APPENDICES

APPENDIX 1

TYPICAL ACTIVITY SCHEDULE

DATE	ACTIVITY (S)
Day 1	**A.M** Arrival Meeting with Touchau/Council
Day 2	A.M **Public Meeting** • Defining Concepts • The Protected Area Process • Presenting the CRE **Participant Meeting**
Day 3	**A.M.** Introductions Community Participation Creating Resource Focus Groups **P.M** Creating Resource List: *The What*
Day 4	**A.M.** Seasonal Resource Use Calendar: *The When* The Village Resource Use Sketch Map: *The Where* Discussion: Resource Use Methods, Availability and Threats: *The How* Group Presentations
Day 5	Activity Break
Day 6	**A.M.** Field Work Preparation • Finishing of Maps • G.P.S. Training/ Where am I on the face of the Earth. • Discussion of goals and objectives of fieldwork • Identifying Teams • Mini-Lectures • Planning the fieldwork **P.M.** Bush Team: Prepare for Departure
Day 7	Village Team: **A.M.** Bush Team Departs Village Team o Prepare for surveys o Create Village Map o Review survey
Day 8	**A.M.** Village Surveys and stories Video Show at school and quiz
Day 9	Continue with village surveys and interviews
Day 10	Bush Teams returns Village Team • Compile Interview Results • Prepare Presentations

APPENDIX 2

TEAM PROFILE

Vitus Antone (Forest Resource Advisor):

Vitus is from Lethem. He has been working for CI for one year. Before joining CI he worked at Iwokrama as a forest ranger. He attended both the University of Guyana and the Guyana School of Agriculture.

During the CRE his role was:
Co Facilitator
Technical Lead on Digital and Video Photography,
CRE presentations
Training

Vitus has participated in 8 CRE's. His role for Team B includes:

- Co-lead facilitator
- Bush Team Leader
- Focus Group Leader
- Lead responsibility for Bush Team activities
- Technical Lead for photography, video, GPS work

Vitus co-facilitates the team's activities. He holds lead responsibility for all photographic data, including downloading of images, maintenance and identification. He co-designed and implemented the community field leader training as well as delivered training in report writing for the CRE team members.

Vitus has designed and delivered presentations on forestry topics for the student interactions using digital photo presentations and PowerPoint, and has delivered mini-lectures on his experiences while working with Iwokrama. He manages the technical issues for Team B, including GPS training and mapping lectures. Vitus has led 6 Bush Teams with 33 participants over 24 days and 430 miles.

Natalie Victoriano (Macushi Interpreter):

Natalie is originally from Kumu village. She has worked with CI for two years. Before joining the organization she was the Women's Group Leader, Church Assistant and a Village Councillor.
Initial Role: Macushi Interpreter
Current Role: Interpreter
Facilitator
Lead Village Team Activates
Asst. Purchasing Manager

Natalie has participated in 10 CRE's. Her role in the team includes:

- Interpreter
- Facilitator
- Focus Group Leader
- Lead Facilitator Village Team
- Kitchen Manager

Natalie assists Margaret Gomes in purchasing supplies, taking responsibility for all medical/first aid supplies. She assists in supply inventories and maintains supply list and menus on the computer using MS Word. During the activity Natalie managed the kitchen and the preparation of over 300 meals and all rations for the bush teams. As Village Team leader, Natalie facilitates all Village Team Activities, including:

- the village sketch map
- Village survey
- Preparation of participants for the student and public meeting presentations
- Student interactions

Natalie has also lead Bush Teams for the Katoka Pilot and the Maruranau CRE.

Sebastian Tancredo (Bush Team Leader):

Sebastian is from Nappi village. Sebastian was involved with the Primate Group in Nappi where he received some GPS training from 2000 – 2001. Prior to the beginning of the CRE in Parishara he received an extensive one-week training on the GPS and fieldwork.

Sebastian then proceeded to participate in four CRE activities as a Bush Team Leader. His responsibilities included:

- Giving basic training on the GPS
- Leading a team
- Choosing routes
- Gathering data
- Report writing

In addition Sebastian also contributed to the workshop by: co-facilitating, interpreting and assisting the team where necessary.

Esther McIntosh (CRE Facilitator):

Esther is from Georgetown. She has been working with CI-Guyana for over a year as the CRE Facilitator and has participated in 8 CRE exercises. She worked on the CRE as a lead facilitator for the team.

Her responsibilities during the CRE include:

Facilitator
Village Team leader
Logistics
Management

Reporting

Esther was lead facilitator for the team and lead for the Village team and student activities. She was also instrumental in implementation of the overall CRE project, designing methodology, capacity building, training and reporting.

Date Month | Day | Year 2002

Group

Feature Codes:
Farming=F; Hunting=H; Fishing=P; Gathering=G

Point Identification

Code GPS Unit | Village | Feature | Waypoint

Coordinates North | West

Area Identification

Name

Use Zone Savannah ☐ Bush Mouth ☐ Bush ☐ Mountain Foot ☐ Up the Mountain ☐

HUNTING

Type of Site	Site Use Status	Species Hunted	Methods Used	Frequency of Use
Feeding Area ☐	Active ☐	Bush Cow ☐	Bow & Arrow ☐	Daily ☐
Track ☐	Inactive ☐	Deer ☐	Hunting Dogs ☐	2-4 times/week ☐
Drinking Pond ☐		Bush Hog ☐	Guns ☐	Monthly ☐
Nesting Area ☐		Powis ☐	Traps ☐	4-6 times/year ☐
Other ☐		Others ☐	Others ☐	1-2 times/year ☐
				Other ☐

Amount of Catch	Use of Catch	Threats to Site	Condition of Resource
Less than 3 ☐	Domestic Consumption ☐	Over-hunting ☐	Excellent ☐ Good ☐
4-10 ☐	Sale Outside of Village ☐	Mining ☐	Poor ☐ Very Poor ☐
10-20 ☐	Both ☐	Poaching ☐	Notes
20-50 ☐	% Amount sold outside village ☐	Logging ☐	
More than 50 ☐		Other ☐	

FISHING

Type of Site	Site Use Status	Species Fished	Methods Used	Frequency of Use
River ☐	Active ☐	Huri ☐	Hook and line ☐	Daily ☐
Creek ☐	Inactive ☐	Yarou ☐	Poisoning ☐	2-4 times/week ☐
Pond ☐		Lukunani ☐	Seine/ Cast Net ☐	Monthly ☐
Other ☐		Patwa ☐	Bow and Arrows ☐	4-6 times/year ☐
		Others ☐	Others ☐	1-2 times/year ☐
				Other ☐

Amount of Catch	Use of Catch	Threats to Site	Condition of Resource
Less than 3 ☐	Domestic Consumption ☐	Over-fishing ☐	Excellent ☐ Good ☐
3-10 ☐	Sale Outside of Village ☐	Mining ☐	Poor ☐ Very Poor ☐
10-20 ☐	Both ☐	Poaching ☐	Notes
20-50 ☐	% Amount sold outside village ☐	Poisons ☐	
More than 50 ☐		Other ☐	

Date: Month | Day | Year 2002

Group

Feature Codes:
Farming=F; Hunting=H; Fishing=P;
Gathering=G

Point Identification

Code: GPS Unit | Village | Feature | Waypoint

Coordinates

North | West

Area Identification

Name

Use Zone: Savannah ☐ Bush Mouth ☐ Bush ☐ Mountain Foot ☐ Up the Mountain ☐

GATHERING

Site Use Status
- Active ☐
- Inactive ☐

Species Collected
- Palm Leaves ☐
- Wild Fruits ☐
- Muckru ☐
- Medicine ☐
- Others

Methods Used
- Cut and Carry ☐
- Tapping ☐
- Picking ☐
- Pork-knocking ☐
- Others

Frequency of Use
- Daily ☐
- 2-4 times/week ☐
- Monthly ☐
- 4-6 times/year ☐
- 1-2 times/year ☐
- Other

Amount Collected

Use of Collection
- Domestic Consumption ☐
- Sale Outside of Village ☐
- Both ☐
- %Amount sold outside village

Threats to Site
- Over-Harvesting ☐
- Mining ☐
- Poaching ☐
- Logging ☐
- Other

Condition of Resource
- Excellent ☐
- Good ☐
- Poor ☐
- Very Poor ☐

Notes

FARMING

Farmer's Name

Active ☐ Fallow ☐ Abandoned ☐

Site Use Status

Age of Farm

Persons Fed

Method of Extension
- Shifting ☐ Extension ☐
- Rotation ☐
- Other

Size of Farm
- < 1 acre ☐ 1 acre ☐
- 2-5 acre ☐ > 5 acre ☐

Soil Type
- Gravelly ☐ Sandy ☐
- Clayey ☐ Peggasse ☐
- Loamy ☐

Main Crops Planted
- Cassava ☐ Banana ☐
- Peanuts ☐ Mixed ☐
- Other

Yield per Acre

Use of Produce
- Domestic Consumption ☐
- Sale Outside of Village ☐
- Both ☐
- % Amount sold outside village

Threats to Site
- Over-farming ☐
- Mining ☐
- Wildlife ☐
- Logging ☐
- Other

Pest and Diseases
- Deer ☐
- Caterpillar ☐
- Acoushi Ants ☐
- Hogs ☐
- Other

Notes

COPY OF BUSH DATA SUMMARIES

Farming Summary

Village KM

Total Number of Points 23

Use None

Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain			
0	5	17	1	0			

Use Status

Active	Fallow	Abondoned	No Response				
23	0	0	0				

Method of Extension

Shifting	Extension	Rotation	Other	No response			
13	9	0	0	1			

Size of Farm

< 1 Acre	1 Acre	2-5 Acre	> 5 Acre	No Response			
1	12	9	0	0			

Soil Type

Gravelly	Sandy	Clayey	Peggasse	Loamy	No Response		
7	12	0	0	3	1		

Main Crops Planted

Cassava	Banana	Peanuts	Mixed	Other	No Response		
7	6	0	10	0	0		

Use of Produce

Dom. Consmpt.	Sale	Both	No Response				
12	0	10	1				

Threats to Site

Over-Farming	Mining	Wildlife	Logging				
0	0	0	0				

Pest and Diseases

Deer	Caterpillar	Acoushi Ants	Crickets	Hogs	Monkeys	Birds	Agouti
20	17	21	0	16	0	0	0

Hunting Summary

Village KM

Total Number of Points 11

Use None

Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain			
0	3	2	0	6			

Type of Site

Feeding Area	Track	Drinking Pond	Nesting Area	Combined			
7	2	0	0	2			

Use Status

Active	Inactive						
11	0						

Species Hunted

Bush Cow	Deer	Bush Hog	Powis	Armadillo	Turtles	Labba	Acouri
9	10	10	2	0	0	3	0

Methods Used

Bow and Arrows	Hunting Dogs	Guns	Traps				
11	5	9	1				

Frequency of Use

Daily	2-4X/week	monthly	4-6 X /year	1-2 X /year			
2	3	0	0	6			

Amount of Catch

< 3	3 to 10	10 to 20	20 to 50	> 50			
5	6	0	0	0			

Use of Catch

Dom. Consumpt	Sale	Both					
10	0	1					

Threats to Site

Over-Hunting	Mining	Poaching	Logging				
0	0	0	1				

Condition of Resource

Excellent	Good	Poor	Very Poor				
11	0	0	0				

Fishing Summary

Village KM

Total Number of Points 5

Use None

Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain					
0	2	1	2	0					

Type of Site

River	Creek	Pond	Other						
0	4	1	0						

Use Status

Active	Inactive								
5	0								

Species Fished

Arapima	Tiger Fish	Lukunani	Biaira	Houri	Yarrow	Patwa	Piaba	Haimara	Kassi
0	0	1	0	5	5	5	3	0	3

Methods Used

Hook and Line	Poisoning	Cast Net/Seine	Bow and Arrows						
5	0	5	5						

Frequency of Use

Daily	2-4X/week	Month	4-6 X /year	1-2 X /year					
2	3	0	0	0					

Amount of Catch

< 3	3 to 10	10 to 20	20 to 50	> 50					
0	2	2	1	0					

Use of Catch

Dom. Consumpt	Sale	Both	No Response						
4	0	0	1						

Threats to Site

Over-Fishing	Mining	Poaching	Poisons						
0	0	0	0						

Condition of Resource

Excellent	Good	Poor	Very Poor						
4	1	0	0						

Gathering Summary

Village KM

Total Number of Points 15

Use None

Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain			
0	3	5	2	5			

Use Status

Active	Inactive						
15	0						

Species Collected

Palm Leaves	House Poles	Muckru	Nibbi	Wild Fruits			
5	0	3	1	1			

Methods Used

Cut and Carry	Tapping	Picking	Pork knocking				
14	1	0	0				

Frequency of Use

Daily	2-4 times /week	Monthly	4-6 Times /year	1-2 Times /year	Other		
0	1	4	2	7	1		

Use of Collection

Dom. Consumpt	Sale	Both					
14	0	1					

Threats to Site

Over-Harvesting	Mining	Poaching	Logging				
0	0	1	1				

Condition of Resource

Excellent	Good	Poor	Very Poor				
12	3	0	0				

Age:
# of dependants:
Gender:

Conservation International Guyana

COMMUNITY RESOURCE EVALUATION
VILLAGE SURVEY

FARMING

(1) How many farms do you have?

(2) Where are your farm(s) located (savannah, bush mouth, up the mountain etc.)?

(3) How big is your farm(s)?

(4) How do you get to your farm (bicycle, walking, boat etc.)?

(5) How far away is your farm (hours/minutes)?

(6) How often do you go to your farm?

(7) How much of your produce do you sell and where?

(8) What are the threats that affect your farm?

(9) What do you think is the biggest threat to your farm?

10) How do you solve these problems?

(11) What has changed?

HUNTING AND FISHING

(1) Where do you go to hunt / fish?

(2) How often do you go there to fish/hunt?

(3) What are the methods that you use (e.g. hook and line, seine etc.)?

(4) Do you sell any of the fish or game that you catch (in the village, Lethem etc.) and how much of it do you sell?

(5) What are the threats that affect your hunting/fishing resources?

(4) Do you have to go further to fish or hunt than you did in the past?

(5) How much further do you have to go (time)?

(6) Is the fish or game as available as it used to be in the past?

(7) Is there any animal/fish that is not there anymore?

(8) What has changed?

GATHERING

(1) Where do you go to gather materials?

(2) How often do you go to gather materials?

(3) Do you sell any of the materials that you gather (in the village, Lethem etc.) and how much do you sell?

(4) What are the threats to the resources that you gather?

(5) Are the resources that you gather, as available as in the past?

(6) Do you have to go further than you did before?

(7) How much further do you have to go (time/miles)?

(8) Is there any material that you used to gather that is not there anymore?

(9) What has changed?

COPY OF VILLAGE SURVEY SUMMARIES

Farming Village Summary

Village Kumu

Total Number of Points 36

Age

No Response	15-28	29-40	41-55	Above 55			
0	5	13	9	9			

Gender

Male	Female	No Response					
18	18						

Number of Dependants

Average	Variance	Maximum	Minimum				
7.03	8.97	15	1				

Number of Farms

Average	Variance	Maximum	Minimum				
2.78	1.43	7	1				

Size of Farm

< 1 Acre	1>2 Acre	2-4 Acre	5 Acre and more	Other	No Response		
6	12	16	1	1	0		

Farming Zone

Savannah	Bush	Bush Mouth	Deep Bush	Mountain Foot	Up the Mountains	Other	No Response
3	2	12	2	10	7		

Methods of Transportation

Walking	Bicycle	Bullock Cart	Boat	Other	No Response		
27	12	3	0	0	0		

Frequency of Use

Daily	2 x wk	3 x wk	4 x wk	5 x wk	Weekly	2 x mth	Other
20	4	1	2	0	4	1	4

Use of Produce

Dom. Consmpt.	Sale	Both	No Response				
10	0	24	2				

Threats to Farms

Wild animals	acoushi ants	weather	caterpillar	domestic animals	monkey	weed	other
25	27	7	3	3	4	0	3

Biggest Threat

Wild animals	acoushi ants	weather	caterpillar	domestic animals	monkey	weed	fire
17	14	5	0	2	1	0	0

Hunting Summary

Village Kumu

Total Number of Points 10

Age

No Response	15-28	29-40	41-55	Above 55			
0	1	4	3	2			

Gender

Male	Female	No Response					
7	3						

Number of Dependants

Average	Variance	Maximum	Minimum				
7.89	11.36	12	1				

Frequency of Use

2 x wk	Weekly	Monthly	Seasonally	Quarterly	Yearly	Other	No Response
1	6	0	0	0	1	1	1

Methods Used

Arrow & Bows	Guns	Dogs	Other	No Response			
4	1	1	0	4			

Hunting Zone

Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain	Deep Bush	Other	No Response
0	0	2	5	3	0	0	0

Hunting Site

Feeding area	Track	Pond	Creek	Nesting area	Combined	No Response	
0	0	0	1	0	7	2	

Use of Catch

Dom. Consumpt	Sale	Both	No Response				
6	0	4	0				

Threats to Site

Over-Hunting	Mining	Weather	New_Methods	Fire	Population	Other	No Response
1	0	0	0	7	3	2	1

Do you Fish Further?

Yes	No	No Response					
9	1	0					

Change In Resource availability

Yes	No	No Response					
9	1	0					

Extinct or Scarce Species

deer	amadillo	labba	turtle	bush hog			
			1				

Fishing Summary

Village Kumu

Total Number of Points 35

Age

No Response	15-28	29-40	41-55	Above 55			
0	5	13	9	8			

Gender

Male	Female	No Response					
18	17						

Number of Dependants

Average	Variance	Maximum	Minimum				
6.91	8.75	15	1				

Frequency of Use

Daily	2 x wk	3 x wk	Weekly	3 x mth	Monthly	Other	No Response
11	6	1	10	1	2	4	0

Fishing Zone

Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain	Deep Bush	Other	No Response
7		9	5	4	1		9

Fishing Site

River	Creek	Pond	Falls	Combined	No Response		
1	24			10			

Use of Catch

Dom. Consumpt	Sale	Both	No Response				
22	3	10					

Methods Used

Hook and Line	Poisoning	Cast Nets	Bow and Arrows	Seine	Other	No Response	
30		6	1	21	7		

Threats to Site

Over fishing	Weather	Poison	Population	New_Methods	Outsiders	Fire	Crabs
1	1	10	16	4	2	11	0

Do you Fish Further?

Yes	No	No Response					
27	7	1					

Change In Resource availability

Yes	No	No Response					
25	8	2					

Extinct or Scarce Species

Arapaima	Big Fishes	Lukunani	Cuti	Turtle	Yakatu	Tiger Fish	Other
		3	2	1	3	10	5

Gathering Summary

Village Kumu

Total Number of Points 29

Age

No Response	15-28	29-40	41-55	Above 55			
0	3	10	9	7			

Gender

Male	Female	No Response					
16	13						

Number of Dependants

Average	Variance	Maximum	Minimum				
7.29	8.56	15	1				

Frequency of Use

Daily	Monthly	2 x Yr	Yearly	Every 2 yrs	Every 5 yrs	Other	No Response
1	1	4	11	2	4	5	1

Gathering Zone

Savannah	Bush Mouth	Bush	Mountain Foot	Up The Mountain	Deep Bush	Other	No Response
0	3	6	15	5	0	0	0

Use of Catch

Dom. Consumpt	Sale	Both	No Response				
18	4	6	1				

Threats to Site

Over-Harvesting	Weather	Population	Fire	Woodants	Outsiders	Other	No Response
0	0	7	12	8	3	3	4

Do you Gather Further?

Yes	No	No Response					
22	6	1					

Change In Resource availability

Yes	No	No Response					
18	10	1					

Extinct or Scarce Species

House Materials	Green Heart	Purple Heart	Cedar	Frejo	Red/Blood wood	Spice wood	Other
	4	4	1	2	4	4	